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IN THE UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF NEW YORK
ROBERT A. FALISE; LOUIS KLEIN, JR.; FRANK MACCIAROLA; and CHRISTIAN E. MARKEY, JR.; As Trustees,
Plaintiffs,
vs.
THE AMERICAN TOBACCO COMPANY; B.A.T. INDUSTRIES, PLC; PHILIP MORRIS, and LORILLARD TOBACCO COMPANY,
Defendants.
No. 99 CV 7392 (JBW)
Related to:
97 CV 7640 (JBW)RJ REYNOLDS TOBACCO COMPANY; BROWN & WILLIAMSON TOBACCO INCORPORATED; LIGGETT, INC.;

VIDEOTAPE DEPOSITION OF
MARLAND DULANEY, JR. Ph.D., DABT,
produced, sworn, and examined on Friday, the 14th day of July, 2000, between the hours of 8:00 o'clockin the forenoon and 6:00 o'clock in the afternoon of that day at SHOOK, HARDY & BACON LLP, One KansasCity Place, 1200 Main Street, in the City of Kansas City, County of Jackson, State of Missouri, before:KAY L. SCARPINO, RPR, CSR Registered Professional Reporter, a Notary Public within and for the Stateof Missouri. Taken on behalf of Plaintiffs pursuant to Notice to Take Depositions and Agreement.

Job No. 111042

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APPEARANCES

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EXHIBIT PAGENUMBER DESCRIPTION

REFERENCED
1 expert report 4
2 "A Review of Evidence on the
Joint Relationship of Asbestos Exposure and Smoking to Risk of
Lung Cancer" 2273 Environmental Research

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4 British Journal of Industrial Medicine
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5 The Practitioner 263
6 The British Journal of Cancer 275
7 Environmental Research 285

8 The Third Wave of Asbestos
Disease: Exposure to Asbestos
in Place 289

9 Surgeon General's 1985 report 304

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(Whereupon, Dulaney Deposition Exhibit No. 1 was marked for identification by the reporter.)

MARLAND DULANEY, JR. Ph.D., DABT,
of lawful age, having been first duly sworn to tell the truth, the whole truth, and nothing but the truth, testified as follows:

DIRECT EXAMINATION

BY MR. STOLPER:

Q. Good morning, Dr. Dulaney.
A. Good morning.
Q. As I just stated, my name is Michael Stolper. I represent the plaintiffs in this matter. For purposes of the transcript, can you state your address?
A. [DELETED]

Q. And where are you employed?
A. I'm self-employed.
Q. And your company is called Dulaney Toxicology, Inc.?
A. Yes.
Q. Okay. Where is that based?
A. [DELETED].

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Q. [DELETED]?
A. Yes.
Q. And for how long has that been in existence?

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A. I started Dulaney Toxicology back in 19 -- at the end of 1994 and then incorporated in 1998.
Q. You mean it was unincorporated from '94 to '98?
A. Yes.
Q. Okay. What prompted you to incorporate in '98?
A. The advantages when I became my own business and was sole-supporting, there were advantages for being able to purchase a vehicle under the corporation and setting up for tax purposes.
Q. Those were advantages as of '98?
A. Yes.
Q. Okay. Before we -- I do have some questions I'd like to ask you about your business, but before we do that, perhaps we start with your qualifications and background.
We've put before you what's been marked as
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Exhibit No. 1, the -- it's a copy of the expert report that we received.
Do you recognize the document?
A. Yes.
Q. Does that appear to be your expert report?
A. Yes, it does.
Q. Okay. And does -- as my copy indicates, your expert report attaches your CV. Your CV includes a list of publications and lectures; is that right?
A. Let's see. Publications, lectures, and scientific presentations, yes.
Q. Okay. And Exhibit B is a list of cases you've been involved in over the last five years; is that right?
A. Yes, uh-huh.
Q. Exhibit C appears to be what we refer to as a reliance list. You recognize Exhibit C?
A. Yes.
Q. How would you describe Exhibit C?
A. A bibliography.
Q. Okay. At the very end, there's an addendum to Exhibit C, which is a one-page document
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that relates to Dr. Furst. Do you see that?
A. Yes.
Q. Okay. Did I miss anything that's contained in your expert report or in the attachments?
A. I don't believe so.
Q. Okay. I've got a series of questions I'd like to ask you about the information contained in here. I guess a good starting place would be your background.
I believe you have a Ph.D. in pharmacology and toxicology; is that right?
A. Yes.
Q. Do you have any other postgraduate degrees?

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A. No.
Q. You have a B.S. in chemistry?
A. Yes.
Q. Do you have any degrees in biochemistry?
A. No.
Q. Environmental health?
A. No.
Q. Industry hygiene?
A. No.
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Q. Occupational health?
A. No.
Q. Epidemiology?
A. No.
Q. Biostatistics?
A. No.
Q. Pathology?
A. No.
Q. You don't have a medical degree; is that right?
A. Correct.
Q. Okay. That was quick. Teaching, you identify a couple of teaching responsibilities in your CV. One of them in Florida; is that right?
A. Yes.
Q. Can you -- visiting professor at Florida A & M?
A. Yes.
Q. Where's Florida A & M? Oh, I see. It's located in Tallahassee?
A. Yes.
Q. Local for you?
A. Yes.
Q. How long have you been a visiting
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page 9
professor at Florida A & M?
A. I believe it was -- it's been two years or so.
Q. Okay. And can you describe your role as visiting professor?
A. I lecture to graduate students in the areas where I, actually, practice or part of my practice of toxicology: risk assessment, risk communication, radiation risk assessment. In effect I lecture on the practice of toxicology.
Q. The graduate students are in the Department of Pharmacology and Pharmaceutical Sciences?
A. Yes.
Q. Is there a separate graduate department for toxicology?
A. I don't know.
Q. Is it possible that Florida A & M has a separate graduate program in toxicology?
MR. DUNCAN: Objection. Asks for speculation.
Q. (By Mr. Stolper) You can answer.
A. I know of none.
Q. How frequently do you lecture at Florida
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A & M?
A. Usually about two series of lectures in the year, in the springtime and in the fall. That's what it was last year. This year I've only lectured in the springtime, so we haven't gotten to the fall yet.
Q. Okay. So when -- what would constitute a series of lectures?
A. Risk assessment is too broad a topic to cover in two or three hours, so we'll break it up into basics of risk assessment, radiation risk assessment, and then other topics. They may want to learn about risk communication, or they may want to learn about how you actually go about practicing toxicology.
Some of it -- these are usually senior graduate students, so I will leave it up to them many times, what else do they want to know? What else do they want to learn?
Q. How many lectures per semester do you give?
A. I believe last year -- I believe it was five or six, and this year, I believe, it was three or four. I can't remember.
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Q. Are you paid by Florida A & M?
A. No. I do it for free.
Q. How did you become -- how did your visiting professorship come about?
A. They -- Dr. Malak Kolta asked me if I would come and lecture, teach his students about risk assessment, because they didn't have anybody on the staff that really understood the process. So I told him that -- that -- that I would be happy to do it, and then in return he said, "Well, we will -- we'll name you as a visiting professor," right.
Q. Visiting professorship isn't a university appointment; is that right?
A. Correct.
Q. Okay. So you just lectured this past spring?
A. Yes.
Q. Can you give me an example of one of the lectures you gave?
A. I know it was on human health risk assessment and ecological risk assessment, also, let's see, I believe we did -- we covered risk communication, and then we covered how you would practice toxicology.
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Q. Is it over the course of five or six lectures, or is this one lecture?
A. I believe it was three lectures, each one about two to three hours long.
Q. Okay. You say human -- one of the lectures or part of your series of lectures this spring related to human health risk assessment.
What do you mean by that?
A. Well, that's a term that is used in the hazardous waste business in that CERCLA requires that a baseline risk assessment be conducted at

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hazardous waste sites. And that has two parts: One is for human health and one is for ecological.

Q. I see from your CV that you have a lot of RCRA and CERCLA experience. When you refer to the term "risk assessment," is it tied to those regulatory schemes?

A. RCRA and CERCLA, yes.

Q. So throughout all of the lectures or series of lectures you've given over the last two years at Florida A & M, were they mostly related to issues pertaining to hazardous waste?

A. In the context of risk assessment, yes.

Q. Okay. What would be a specific -- can

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you give a short, abbreviated version of -- of one of your lectures, perhaps, this spring on risk assessment in the context of hazardous waste?

MR. DUNCAN: Objection. Vague. Maybe if you could -- you mean in one or two lines? You don't mean a long, narrative answer?

Q. (By Mr. Stolper) Right, just a short summary to give some description of what -- if I were a student and I sat in one of your lectures, if I wanted the short form of what one of your lectures was about regarding risk assessment.

A. We would go through the stepwise process that CERCLA has -- has borne out. These are the stepwise processes and -- CERCLA, that's capital C-E-R-C-L-A.

MR. DUNCAN: I think she was asking about stepwise. Were you asking about stepwise processes?

(Off-the-record discussion.)

A. Oh, I'm sorry. The CERCLA risk assessment process, we go through the four-step process. What do you need to do this? Where do you get the information? And then how do you actually go about calculating the risks and presenting the

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risks?

Q. (By Mr. Stolper) You've referenced a four-step process. Is that the same four-step that you reference on page 2 of your --

A. No, the four-step process I'm talking about is what is described in the Risk Assessment Guide for Superfund.

Q. That's different from the four-step process there?

A. Yes, uh-huh.

Q. What's the four-step process that you were just referring to under RCRA?

A. I think I didn't talk about RCRA.

Q. Oh, I'm sorry. I misunderstood your answer. The four-step process you were referring to, not the one that's in your report, can you describe it?

A. First thing, you need to collect your data. What data do you need? What are you trying to answer? What question are you trying to answer and how would you collect the data to do that? The second thing you want to know is how people could

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become exposed? In other words, who are your receptors?

The second is -- I'm sorry, the third is, what is the toxicity information that's available for the chemicals that you've identified in step one? And then the fourth is once you have concentration, you have how people can become exposed. What are the risks associated with that? And then you present those risks in the context of the legal framework of CERCLA.

Q. What do you -- you identified four steps. How do you go about satisfying step 3?

A. I'm sorry? You mean the toxicity information?

Q. (Nods head.)

A. There is something called IRAS, the Integrated Risk Information System from the USEPA. That's where you first go -- this is where the toxicity information is. The second step is the Health Effect Summary Table or HEST and then the third is the EPA.

Q. This is giving you information on particular agents?

A. Yes. Chemicals and then also either the cancer slope factor, which is the relationship of the dose effect or dose response for cancer and then the -- for noncancer it's called the reference dose.

Q. Is asbestos one of the agents that would be listed in any one of those sources that you just identified?

A. Asbestos is one of the chemicals that you would evaluate.

Q. Okay. I believe your CV also references lectures at the University of Mississippi; is that right?

A. Yes. The University of Mississippi Medical Center, yes.

Q. Okay. Do you currently give lectures at the University of Mississippi Medical Center?

A. Yes. I already have lectured there this year.

Q. Okay. Describe your -- how often do you give lectures?

A. Whenever I am in Jackson, they usually ask me to stop by and give a lecture.

Q. Just on some informal basis?

A. It's -- yes, it's more informal than it is structured.

Q. Okay. Who are you giving the lectures to?

A. In some situations, it's the graduate students in the Department of Pharmacology and Toxicology. In some situations it's what they call departmental seminars, which are open to the -- the entire university complex, and then there -- I have also given lectures to combinations of graduates and

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medical students that are taking courses within the Department of Toxicology or Pharmacology and Toxicology.

Q. Subject matter of these lectures?

A. Usually it's risk assessment, risk communication, ecological risk assessment.

Q. What's an example of risk -- what do you mean by risk communication?

A. Risk communication is the practice of communicating and -- communicating risks to different populations. You're trying to explain to the general population what a risk from a hazardous waste, risk assessment, for example, what that means.

Q. Okay. So in its simplest form, you're just communicating known risk to a general population or to those that are at risk of that?

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MR. DUNCAN: Objection.

A. What you're doing is you're explaining the process. You're explaining what -- what the risks mean and putting them into context that people can understand, and, of course, you're answering questions about that.

Q. (By Mr. Stolper) Okay. Have you been called upon in your professional career to do that?

A. Yes.

Q. Can you give an example?

A. I do it very often for the Navy. I think some of the examples are here (indicating). Many Navy bases I've done that. The list would be pretty exhaustive.

Q. Okay. Why don't we just stick with maybe the most recent example.

A. That would be Marine Corps Logistics Base, Albany.

Q. Albany...

A. Georgia, I'm sorry.

Q. We've got an Albany where I'm from too.

A. Yes, Albany, Georgia.

Q. And that's a military facility?

A. Yes.

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Q. What was -- what kind of risk communication activity did you do there?

A. This was to answer questions about what the risk assessment said, what did it mean? And answer questions from the general public of, you know, they had specific questions on safety, health, things like that as associated with the hazardous waste sites.

Q. General public, you mean outside the military base?

A. Yes.

Q. What was the risk at this particular military base?

A. The groundwater needed to be cleaned up on the base, but off the base, the groundwater was safe.

Q. And was that the general tenure of the message that you were giving to the general public?

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A. That was the message, yes.
Q. Okay. And who had conducted the risk assessment?
A. A company that I used to work for named Harding Lawson had actually conducted the risk assessment. I reviewed it and then it was submitted
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according to the CERCLA guidelines, and then the Navy specifically asked for me to be present for the risk communication.
Q. That involves speaking at a meeting?
A. Yes.
Q. Is it on more than one occasion or is it a one-shot deal?
A. I'm sorry?
Q. Your speaking engagement to speak to the general population, is it something that happens on a regular basis, or is it you come once to a town hall meeting and answer questions about groundwater contamination?
A. It can be both.
Q. And that particular example?
A. This was my third or fourth meeting with the population from Albany.
Q. Okay. Who were you representing when you were speaking to the general population?
A. I was presenting the results of the risk assessment that was done for the Navy, so I -- I guess the closest I could say is I was -- I was -- I really wasn't representing anyone. I was -- I was discussing what the risks were in answering
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questions.
But it wasn't a question of an advocate or anything like that. I wasn't representing anyone.
Q. If I were attending that meeting and I represented -- and I lived in town in Albany, Georgia, and I was attending and you were speaking, who would I think you were associated with?
A. I would be -- probably what you're asking and I -- I don't want to assume anything, but I imagine it would be the Marine Corp., the people on the base, right.
Q. When you introduced yourself at that meeting, did you introduce yourself as acting on behalf of any -- the Marine Corps?
A. No, from Dulaney Toxicology.
Q. Now, did you have any training or educational experience in risk communication?
A. Yes.
Q. Where?
A. The -- I have taken Vincent Cavello's course in risk communication, both his general course and his advanced course, as well as Peter Sandman's. I've taken two courses under Peter Sandman for risk communication.
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Q. Okay. That's outside of your Ph.D.?
A. Yes.
Q. And when were those -- when did you take

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those courses roughly?
A. In the middle to late '80s.
Q. Okay. Who are the individuals who offered those courses?
A. They were people that were hired by the Navy to teach the concept of risk communication to Navy personnel, and I was a subcontractor for the Navy or working for a company that had a subcontract. They recognized the need to have a toxicologist with this training, and they invited me to join them.
Q. Okay. What were the credentials of those two gentlemen that you just identified that gave that course?
A. They are recognized within the toxicology community as some of the foremost risk communicators and risk communication trainers.
Q. They're toxicologists?
A. Yes.
Q. With Ph.D.s in toxicology?
A. I'm not sure of their credentials. I --

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I would imagine so.
Q. You would consider risk communication within the -- within the field of toxicology?
A. Yes.
Q. Is that -- are there courses given in Ph.D. programs today in toxicology on risk communication?
A. Yes.
Q. You didn't take any when you were getting your Ph.D.?
A. It was not a discipline when I was taking my doctorate.
Q. When did it become a discipline?
A. I don't know, and it became well-recognized in the early to middle '80s.
Q. In what context?
A. Much -- there was a lot of concern about hazardous waste sites, and so I believe that this is where it developed.
Q. The two gentlemen that you referred to -- I apologize for not remembering their names -- but the two that gave you these courses on risk communication, were they involved in hazardous waste?

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A. I'm not sure what they -- what all their involvements were in.
Q. Was the scope of their risk communication courses tied to hazardous waste?
A. No.
Q. Were they courses, did you say, that you took?
A. The Sandman courses were actually sponsored by the Society of Toxicology. They were continuing education courses.
Q. Are you a member of the Society of Toxicology?
A. Yes.
Q. Is that in your CV?

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A. Yes. On -- I guess it's marked on page 2, American Society of Toxicology.
Q. The American Society of Toxicology is the same -- well, let me ask you this: Is there a Society of Toxicology?
A. No. I'm sorry. The full name is the American Society of Toxicology.
Q. Okay. But there's -- there's no other entity out there known as The Society of Toxicology?
A. Correct.

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Q. Okay. You said they were the Sandman courses and then what was the name of the other gentleman?
A. Vincent Cavello. These were actual courses, week-long courses.
Q. And the Cavello course you took once, twice?
A. He has a basic course and an advanced course.
Q. You took both?
A. Yes.
Q. They were each a week long?
A. Yes.
Q. Okay. That was through the Navy?
A. Excuse me?
Q. Was that through the Navy?
A. Yes.
Q. The Sandman course, how long was that?
A. The first Sandman course is -- it's maybe five or six hours, and then the second Sandman course is the advanced course is about the same length.
Q. So a total of about two days?
A. Something like that, yes.

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Q. You took both courses?
A. Yes.
Q. Other than two weeks' worth of Cavello courses and a couple days' worth of Sandman courses, have you had any other training in risk communication?
A. No.
Q. Now, your CV -- I'm sorry -- your expert report on the first page refers to extensive training and experience in conducting public information sessions -- well, I'll stop right there. Do you see where it says that?
A. Yes.
Q. Is that the reference in -- is that a reference to what we're just talking about?
A. The training part, the experience as you'll see if you look later in my CV, the number of public meetings that I have conducted, training sessions that I've conducted, teaching sessions that I've conducted for the general public, yes.
Q. You've done teaching classes for the general public?
A. Yes.
Q. On risk communication?

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A. Yes.
Q. Can you give me an example?
A. For naval air station, Jacksonville -- I'm sorry. Naval air station Cecil Field in Jacksonville. I was asked to give a series of lectures about toxicology, risk assessment, and they specifically asked for information on risk communication.
Q. That was to the folks in Jackson (sic)?
A. This was open to the general public. The specific audience was the Restoration Advisory Board, which is the civilian advisory board to the Navy on -- to give the -- the general public input to hazardous waste cleanups.
Q. When you referred to the extensive training, are you referring exclusively to the Sandman and Cavello courses?
A. Yes.
Q. Going forward just the rest of that line in your report, it says you've got experience in preparing public relations and press release information.
Do you see where it says that?
A. Yes.
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Q. Can you describe what kind of training you have in preparing public relations press release information?
A. In public relations that is certainly a part of risk communication in that how you would present this information to the general public, how that would be received, what is the best way to present this information in a format that's understandable? And in press release information, you want to do the same for the press.
Q. So is it fair to say that the public relations and press-release work are subsumed under your general description of risk communication?
A. I'm sorry. I don't know what the word "subsumed" means.
Q. Let me say it a different way. You've described this morning your experience in -- in a field you've referred to as risk communication.
A. Yes.
Q. And I'm referring you to your expert report where you talk about having experience in public relations and press release information.
Is the latter experience, public relations and press-release information, does that fall within the
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category of your experience of risk communication?
A. Yes.
Q. Okay. What are some of the principles that you distilled from your Sandman and Cavello courses with regard to public relations?
MR. DUNCAN: Objection. Vague.
A. Could you be more specific in -- that's -- that is a very -- that's a very big question.
Q. (By Mr. Stolper) In taking these -- well,

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let's just start with the Sandman courses. In the two days that you participated in these courses, were there some overriding themes that pertained to public relations, how to go about preparing public relations information, just to use your language?

A. There are some basic concepts that you always want to be aware of, and one of these is that perception many times equals reality, whether it's based in fact or not.

Q. Can you explain that further?

A. Well, if people perceive a risk, therefore, it's risky to them. Whether or not it actually is, it's perceived as risky.

Q. Okay. I'll add I'm now confused.

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Someone has a perception that something's risky, obviously the perception is that it's risky. How is -- well --

MR. STOLPER: Can I get his answer read back, maybe we could try to clear this up?

(Whereupon, the requested portion of the record was read by the reporter.)

Q. (By Mr. Stolper) Okay. And that's a basic concept of the course, of Sandman's course?

A. Yeah, one of them -- I'm sorry. In Sandman's course he has -- he says --

MR. DUNCAN: Objection. Let's make sure that we're talking about the same course. Which course are you talking about, Counsel?

MR. STOLPER: I had asked about Sandman, but it doesn't matter to me. I initially lumped them together, and I thought for ease of reference, I could separate them out.

Q. (By Mr. Stolper) If you want to put them back together -- to me I see it as your particular training in this particular area, so I'm trying to distill from you what the concepts you learned at these courses.

You identified one, perception equals reality

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among those who are perceiving the risk. That's the first basic concept.

A. Right. That is much more -- the Cavello method is perception equals reality.

Q. Okay.

A. In other words, if people perceive a risk, they think it's there. It is there, whether or not it's there or not.

Q. It's there from their perspective?

A. Correct, from their perspective, whether it truly is a risk or not.

Q. What does he say to do in response to that perception that may be divorced from reality?

MR. DUNCAN: Objection. Vague.

Q. (By Mr. Stolper) If you understand the question.

A. I really didn't understand the question, I'm sorry.

Q. That's fine. Let me take a step back. Have you been deposed before today?

A. Yes.

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Q. I apologize if this is old information to you, but if I have a question -- if I ask a question and you don't understand it, feel free to let me

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know that, notwithstanding your good counsel's efforts to let me know when my questions aren't so good.

If you don't understand a question, I'd rather that you not give me an answer that both of us aren't in sync with?

MR. DUNCAN: Counsel, for the record, I'm not his counsel.

MR. STOLPER: Oh, you're not, okay.

MR. DUNCAN: Not his personal counsel.

MR. STOLPER: Okay.

Q. (By Mr. Stolper) Back to where we were, once -- the basic concept perception equals reality from the perspective of those who are perceiving the risk, what -- what did you learn from either of the courses that you took in responding to that situation -- to that situation you just described?

MR. DUNCAN: Objection. Vague.

Q. (By Mr. Stolper) Do you understand the question?

A. I think I do. One of the ways that -- that Vince Cavello points out that you can modify the perception is by establishing trust and credibility. Without seeming self-serving,

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basically what he's doing is tell the people the truth.

Q. Anything else?

A. That's -- that is the gist of the Cavello method. Sandman has a little bit different approach. It's similar in the context that perceived risk is the same as real risk, but he says in his terms risk has two components: It has its outrage and hazard.

Q. What does that -- do you know what he means by outrage and hazard?

A. Yes. Hazard is the true risk; outrage is how that risk is perceived by the public.

Q. Okay. And if risk has two components, one is outrage and one is hazard, how do they work together or...

A. That outrage colors how a risk is perceived and similar in this case it's going to be similar to Cavello's. If you have a preexisting bias, then you will perceive a risk differently than if your bias is different. And that meshes very well with Cavello in that the perception equals the reality.

Q. What would be an example of a preexisting

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bias?

A. Children. A risk to a child is perceived as riskier than a risk to an adult.

Q. Do you have an example of this with regard to an agent?

A. There are certain chemicals that have a

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perception because of their high exposure in the -- in the literature, in the newspapers above others. The classic example is Dioxin.

Q. Can you explain?

MR. DUNCAN: Objection.

A. I'm sorry?

Q. (By Mr. Stolper) Why is Dioxin a classic example?

A. Well, Dioxin has a fear factor simply from the word.

Q. So people -- people's perception of the risk of Dioxin exposure is greater than the true risk?

A. No. It colors their perception of the true risk.

Q. How does it color the perception of the risk?

A. That's -- I'm trying to think of a word

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that doesn't use the same word twice. And I guess maybe the best way to describe in nontechnical terms is it prejudices the individual into thinking that the risk may be greater than it actually is simply because it's the word "Dioxin." Prejudice may be what it is we're talking about here.

Q. Now, can prejudice work -- or I think preexisting bias was the term you used. Can it work both ways? Can people underappreciate risk?

A. Yes.

Q. Can you give an example of that?

A. One of the risks that was -- was greater underappreciated for a long time was air bags and children. Everyone thought that because you had an air bag in your car, your child was safe. Well, it turned out not to be the case, because the air bags were expanding so rapidly that they would actually injure children, so they thought they were safe, when, in fact, there was -- there was a risk that they didn't appreciate.

MR. DUNCAN: Counsel, when you get to a convenient point, can we take a couple-minute break?

MR. STOLPER: We can do that right

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now.

MR. DUNCAN: Okay. Thanks.

THE VIDEOGRAPHER: Off the record, time now is 10:23 a.m.

(Brief recess taken.)

(Off-the-record discussion.)

Q. (By Mr. Stolper) Dr. Dulaney, welcome back from the break. During the break, did you have any conversations with any of the attorneys in the room, other than me?

A. Yeah. We talked about my experience with -- at the circular restaurant on the top of my hotel last night.

Q. Okay. Was that the Doubletree?

A. No. It was the Hyatt.

Q. See, they didn't recommend that place to me. Was that the extent of your conversation?

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A. Yeah.
Q. Okay. You understand that as stated earlier by Mr. Duncan, you're not represented by any attorneys today; is that right?
A. Yes.
Q. Okay. So, perhaps, through the course of the day as we take breaks, you can anticipate that

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the first question back from those breaks will be, "Did you have any conversations and tell me the sum and substance of those conversations, to the extent they relate to this case or the issues here."
Before we took the break, we were talking about risk communication in general and specifically you were giving us some examples of -- specifically we were talking about the perception of risk.
A. Uh-huh.
Q. And you gave the example of the air bag manufacturer as an example of the general population underappreciating the real risk that was at issue.
Do you know of any other examples besides the air bag?
MR. DUNCAN: Objection. Vague.
Q. (By Mr. Stolper) Well, I could finish the statement, which was do you know of any other examples where the perceived risk was lesser than the real risk?
MR. DUNCAN: Objection. Still vague.
Q. (By Mr. Stolper) You can answer, if you understand.
A. That's -- I mean, that's such a broad topic. Are you talking about in terms of chemical

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risk? Are you talking about in terms of environmental risk? What kind of risk are you talking about?
Q. Let's use the example of chemical risk.
A. Okay.
Q. Can you give me an example of chemical risk where the perception -- the perception of the risk is less than what you would deem to be the actual risk?
A. Actually, that's very rare. Most of the time it works the other way around. That's one of the reasons why I used the air bag example is that it's one that -- especially in my hometown, we had a very unfortunate situation where a little girl got her neck broken by her expanding air bag.
It's -- it's usually -- in chemical risk, it's usually the other way around.
Q. Can you think of any example where the perceived risk of a chemical is less than the actual?
A. I would think that -- no, it's -- it's -- it's very, very rare that that actually occurs. Usually the perception is just the opposite.
Q. What are some of the things in your

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opinion that influence the perception of risk?
A. One of the most important is advertising.

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In advertising I mean not just necessarily ads, but I mean -- I mean in the terms of what you see in newspapers. Advertising really was -- was a bad term.

Newspapers many times influence the perception of a risk. They will use scary terms; they will use vague terms. These are things that make a risk seem scarier. If it seems exotic, many times it will seem scary. The newspapers are the biggest problem that I have in that they tend to overstate a situation.

Now, there may be some reasons for that, but newspapers are my biggest problem.

Q. When you say -- when you say they're your biggest problem, is that because most of the time you're dealing with a situation in which the perception of the risk is greater than the actual risk?

MR. DUNCAN: Objection. Vague.

A. When you say usually, in what context?

Q. (By Mr. Stolper) Okay. I'm trying to understand when you say they're your biggest

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problem, I'm just trying to understand how you fit -- what do you mean by that?

A. Well, in environmental for hazardous waste sites, for example, a newspaper may say, there is a chemical in the groundwater, and people assume that that represents a risk. Well, there's a big jump between something in the groundwater and something representing a risk.

A newspaper doesn't fill in that gap. Many times people will fill in that gap for themselves. They assume simply because it's there, it represents a risk and that's not true.

Q. Okay. In your experience, have you been -- have you ever had to deal with a situation in which the perception of the risk was less than the real risk?

MR. DUNCAN: Objection. Vague.

A. In the hazardous waste context?

Q. (By Mr. Stolper) In any context. You've said today that you've got experience in risk communication.

A. Uh-huh.

Q. And within that you're dealing with the perception of the risk versus the reality of the

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risk, and you said your biggest problem is the newspapers because they tend to exaggerate risk or not give complete information which tends to lead to a perception of the risk that's greater than the actual risk.

So my question to you now is: Have you ever had to deal with a situation where the perception of the risk was actually less than the actual risk?

A. No. It's very, very rare.

Q. Okay. You did say advertisements. And I know you said that was a misspoken term. That you meant to say newspapers or maybe -- would you say the media at large?

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A. TV and newspapers, yes, and that -- that's really more of a -- I slipped into a Sandman term. It talks about in general as information is passed along, usually in newspapers, commercial sources, many times that's where a major scare factor is.

Q. Okay. Your initial -- what about advertisements?

A. Well, in that case --

MR. DUNCAN: Objection. Vague. What about advertisements?

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MR. STOLPER: I was going to finish.

MR. DUNCAN: I'm sorry. Go ahead.

THE WITNESS: Right. I'm sorry.

Q. (By Mr. Stolper) I'll clean it up because what about advertisements may not be clear enough for everybody.

Do advertisements influence perception of risk, in your opinion?

MR. DUNCAN: Objection. There's nothing in his expert report about advertising or being an advertising expert. So lacks foundation.

Q. (By Mr. Stolper) You can answer.

A. What I mean by -- okay, again, this is -- this is -- as I said, this is a very rare situation what you're talking about. What I'm talking about now is advertising as in putting it in the newspapers for people to read, not in terms of advertisement for products or things like that.

This is written in the newspapers and people read it, and they assume, therefore, it's true or they hear it on TV, and, therefore, they assume that it's true. This is a risk communication term is what we meant by that.

Q. Right. But you had given the example

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before of the air bag.

A. Yes.

Q. And I -- you said people had perceptions of the safety of air bags; right?

A. Uh-huh.

Q. You have to say "yes" or "no" just so she picks it up on the transcript.

A. I'm sorry. Yes.

Q. And my question to you is: What are the types of things that influence people's perception of in -- we'll use your example, air bags?

MR. DUNCAN: Objection. Asked and answered.

Q. (By Mr. Stolper) And you said newspaper stories or things that influence, and I'm now asking you, do advertisements influence the perception of risk?

MR. DUNCAN: Objection. Lacking foundation.

A. I'm just -- I'm -- this is an area that I really have no expertise in terms of -- of commercial advertising. It's just an unfortunate, I guess, use of the same term.

In risk communication we're speaking in terms of

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when things are printed and people read them, then they're advertised. In other words, that's where you have no -- you have no input for -- for -- for a balanced viewpoint. That's called advertising the risk.

Q. Okay. When you have to -- when you do your risk communication. You say -- do you have to assess the perception of the risk versus the reality?

A. It helps if you can.

Q. Okay.

A. That's certainly one of the things that you want to do.

Q. And how do you go about establishing or determining what the perception of any given risk is?

A. In my experience, I found that there are a number of good sources for this. Talking with people in the neighborhood is an excellent way of doing this, finding out what -- what are their fears? What do they think?

There are people that have a great deal of information on what is going on in the general neighborhood. This is -- these are the step -- many

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of the steps that I use to assess the perception of a risk.

Q. Through the morning you've given different examples of the types of work you've done. You just now mentioned neighborhoods. What triggered from me is the question, is most of the work you do as a toxicologist done on a localized basis?

MR. DUNCAN: Objection. Vague.

A. I don't know what you mean by localized. I'm sorry.

Q. (By Mr. Stolper) Let me rephrase that. The work you do as a toxicologist, is it site-specific?

A. For what part of my practice in toxicology are you asking this about?

Q. Risk assessment.

A. Yes. You conduct a risk assessment on a hazardous waste site, yes.

Q. Okay. Have you done risk assessments for things other than hazardous waste sites?

A. Yes.

Q. Can you give examples?

A. I'm currently conducting an assessment

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for a railroad car incident that was in a hazardous waste site.

Q. What's the incident?

A. The case is Nalco -- I believe now it's -- I'm not sure who the plaintiff is. This is a very recent case. I mean, this is -- I think I've submitted a report in the --

Q. Is it identified -- I'm sorry.

A. No, I mean, in the last -- I believe it

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was the last two weeks. I'm not sure the -- the lead plaintiff name of it.

Q. And what's the -- can you describe the -- what the incident was?

A. To some degree, I hope you'll understand there are some parts of discussing this with the attorney that -- that I can't discuss. It hasn't gone to trial.

Q. Okay.

A. The chemical involved is Acrylamide, and it was an Acrylamide tank car that was in a rail yard, and it -- a chemical reaction took place inside there, and there was an evacuation of the nearby neighborhood. And what Nalco has asked me to do is to determine whether there were health effects

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associated with this particular incident.

Q. Nalco, is that the railroad?

A. No. That's the chemical company.

Q. That's the chemical company?

A. Right.

Q. So you've been retained by the chemical company to do a risk assessment?

A. I've been retained by the law firm who represents the chemical company.

Q. Okay. Other than that example of -- are there any other examples where you've done risk assessment that are unrelated to hazardous waste sites?

A. I believe -- if you don't mind --

Q. Go ahead. That's why I was turning to it myself to see if that would be helpful.

A. Let's see. Okay, it -- I think the answer is no; that my work in risk assessment is for hazardous waste sites.

Q. Okay. I'm going to sort of segue a bit back to the next heading I have in my outline, which is to ask you some questions about the various toxicology associates.

I think your CV identifies you as a member or

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diplomate of the American Board of Toxicology?

A. Yes.

Q. Have you been recertified in 2000?

A. I'm currently -- I'm doing that now.

Q. You have to take a test?

A. Yes.

Q. When is that?

A. We just finished it. I think it was two or three weeks ago.

Q. When do you get the test results?

A. Usually by -- I don't remember. It's later in the year.

Q. What's the pass/fail rate of that test?

MR. DUNCAN: Objection. Vague.

A. I do not know.

Q. (By Mr. Stolper) Okay. Are you aware of the Academy of Toxicological Sciences, ATS?

MR. DUNCAN: Objection. Vague.

A. I have heard of it, yes.

Q. (By Mr. Stolper) Are you a member?

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A. No.
Q. What do you know about ATS?
MR. DUNCAN: Objection. Vague.
A. Not much.
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MR. DUNCAN: Just for the record, ATS stands for?
MR. STOLPER: Oh, I defined it before. Academy of Toxicological Sciences, ATS.
MR. DUNCAN: Okay.
A. Not much.
Q. (By Mr. Stolper) Okay. From your CV, it doesn't appear that you serve on any scientific or regulatory advisory panels; is that right?
A. That's correct.
Q. A couple of quick questions about your publications that are identified in your CV, does your CV accurately reflect your publications?
MR. DUNCAN: Objection. Vague.
A. What do you mean by accurately reflect?
Q. (By Mr. Stolper) Do you have any others that aren't listed here?
A. I have not submitted any publications, no.
Q. Nothing pending?
A. Huh-uh.
Q. And as far as you can tell, the CV that's attached to your report from March of -- March 16th of this year is the most current CV?
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A. Yes. It's the most current CV that I have right now.
Q. Okay. Do you have a rough idea how many publications you have listed?
A. No, huh-uh.
Q. Rough percentage of the number of publications that are in peer-reviewed journals?
A. Don't pay attention to that kind of stuff. I mean, I don't know what percentage is.
Q. It doesn't matter to you whether your publication is in a peer-reviewed journal versus a nonpeer-reviewed journal?
MR. DUNCAN: Objection. That mischaracterizes the testimony.
A. I'm sorry. In question in terms if I have something important to put into it, but I don't know what you mean by is it important?
Q. (By Mr. Stolper) Does it matter whether one of your publications is in a peer-reviewed journal or in a nonpeer-reviewed journal?
MR. DUNCAN: Objection. Vague. Mischaracterizes the testimony.
A. I -- the -- I'm sorry. I try to get what I -- the work that I do that I -- that I can present
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that I think is novel, I present it in the form that I think is correct. I don't even take into account whether I consider it important or not. I -- it's important to me to get the information out.
Q. (By Mr. Stolper) Right. But does it --

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does it -- the question I have now is: Does it matter to you which journal it gets published in?

MR. DUNCAN: Objection. Vague. But to the extent you can answer it, Doctor.

A. No.

Q. (By Mr. Stolper) How do you decide which journal to submit -- what was the most recent publication that you've done? Is it the last one listed from 1997?

A. Which -- which -- you mean the "Soil and Sediment Dioxin Variability --

Q. That's the last there.

A. -- at Risk-Based Concentrations"?

Q. Yeah.

A. If I have something that I think is of interest to my colleagues at the Society of Toxicology, for example, I will submit it to The Toxicologist.

Q. The Toxicologist is the journal of that

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society?

A. No. It's the -- well, The Toxicologist is the -- these are abstracts for the society meetings and that is the -- this is -- this is the book of abstracts for the particular scientific meetings.

Q. Awe, so the ones that are abstracts, these are not full journal articles. They're just merely abstracts?

A. That's correct.

Q. Okay. How can I tell from here whether something is an abstract or complete article without pulling them all? Is there anyway to tell from your listing?

A. I mean I know which ones are abstracts and which ones are journals.

Q. Well, to save some time, perhaps on a break I could trouble you to just asterisk the ones that are abstracts versus journals. We can take that up a little bit later; is that okay?

A. That's fine.

Q. Is The Toxicologist a peer-reviewed journal?

A. No.

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Q. Is The Pharmacologist a peer-reviewed journal?

A. I don't remember.

Q. Okay. There's the -- on the page 4 of your CV, the fourth article down, which is from 1989, titled "Drinking Activity and Urinary Electrolyte Excretion in the Rat Following -- boy, I'm not going to say that -- "Introcerebroventricular Administration of" -- I'm definitely not going to say that next one.

There's a reference to a journal, can you -- what journal is that?

A. Journal of Pharmacology and Environmental Therapeutics.

Q. Is that a peer-reviewed journal?

A. Yes.

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Q. Perhaps when I trouble you to asterisk the abstracts from the articles, perhaps you could also indicate which ones are in peer-reviewed journals.

MR. DUNCAN: You want him to note not only which ones are journals but which ones are reviewed?

MR. STOLPER: Which ones are abstracts

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and which one are peer-reviewed journals on a break.

MR. DUNCAN: And that's what you'd like him to do?

MR. STOLPER: Yeah, the two different distinctions so we don't have to run through the list and waste time now during the deposition, if you don't mind, sir.

Q. (By Mr. Stolper) If you had to characterize the subject matters of the publications that you have listed here, how would you do it?

MR. DUNCAN: Objection.

A. What do you mean by characterize? I'm sorry.

Q. (By Mr. Stolper) Describe in general terms the subject matters that are covered by the publications that you've got listed here?

MR. DUNCAN: Objection. Counsel, he's got numerous articles listed here, and I don't know that you could -- it's fair to ask a question on the record of how you would summarize twenty different articles.

Q. (By Mr. Stolper) I don't want you to summarize the contents. I think they're all sort of related to a couple of general themes, so I wanted

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to hear from you, how would you -- well, let's do it a different way.

I'll give you a hypothetical. You and I meet at a toxicology convention and we've never met before, and I -- we're discussing our respective backgrounds and I say to you, "I've published a number of journals on environmental waste hazard," and you said, "Well, you know, I've published a good number of articles too. If you had my CV, you'd see that I have twenty or thirty different entries here."

How would you describe to me the subject matters covered by your various publications, again, in general terms?

MR. DUNCAN: Objection. Incomplete hypothetical and I think it's just asking the same question. Counsel, maybe if you had a specific question.

Q. (By Mr. Stolper) Did you understand my hypothetical?

A. It's not something that -- that I would do, so it is difficult to -- to put myself in a position that I would not do.

Q. Has anybody ever asked you about your publications?

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MR. DUNCAN: Objection. Vague.

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A. In what context? I'm sorry.
Q. (By Mr. Stolper) In a general sense, has anybody ever asked you, "Have you published on toxicology?"
A. Yes. Lawyers have.
Q. Okay. Have you described your publications to lawyers before?
A. No. No one's ever asked me to do that.
Q. Has anybody ever asked you what have you published on? Have lawyers asked you, "What have you published on?"
A. I don't believe that question's ever been asked.
MR. DUNCAN: Counsel, I think that there are, like, four, five pages of publications all with a title on them. Maybe if you have questions on specific ones or if you have something in mind, perhaps you could just save time and ask him, do you publish in this area or whatever?
MR. STOLPER: There's no mystery what I have in mind. I'm trying to save some time and not go through each one of these things. If that's the way we have to do it, we could do that. I'm

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trying to see if there's --
MR. DUNCAN: Perhaps, Counsel, if you ask him a couple of specific questions here, your intent will come through and he can do that.
Q. (By Mr. Stolper) Are you familiar with the term "carcinogenesis"?
A. Yes.
Q. What does it mean to you?
A. Literally what the term actually means is genesis as being -- forming or the beginning of and carcinogen means cancer.
Q. Okay. So the beginnings of cancer?
A. That's my -- I mean, that's what the name actually -- that's what the term actually means.
Q. Any of your publications relate to cancer?
MR. DUNCAN: Objection. Vague.
A. Cancer is one of the endpoints that you use in risk assessment, so in the report that reports on risk assessment, yes.
MR. DUNCAN: I'm sorry. Counsel, are you referring specifically to his list of publications that he's written?
MR. STOLPER: Yeah.

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Q. (By Mr. Stolper) Yeah, my series of questions now are based on your publications, so let me restate the question: Do you have any publications that relate to cancer?
A. As I said, in terms of cancer, the risk assessment of cancer, for example, "The Evaluation of Health Risks Due to Inhalation of Volatile Organic Compounds" --
Q. What page are you on?
MR. DUNCAN: I'm sorry. Dr. Dulaney, if you could go ahead and point us to the page.
THE WITNESS: On page 7.

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Q. (By Mr. Stolper) Okay. From the top?
A. 1, 2, 3 down.
Q. Okay. 1994?
A. Yes. "An Evaluation of Health Risk Due to Inhalation of Volatile Compounds During the Use of Contaminated Groundwater for Irrigation." One of the endpoints that you would look at there would be cancer risk.
Q. In that article, 1994, in the title it refers to volatile organic compounds. What were the specific compounds referenced?
A. It was a very long list. Most of these

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were solvents and breakdowns of solvents.
Q. Was this publication -- was this -- was this publication related to a specific site?
A. Yes.
Q. Which site?
A. This would have been the naval -- submarine-based Kings Bay, at Kings Bay, Georgia.
Q. Any other articles or publications that relate to cancer?
A. I'd have to -- let's see.
Q. Take your time.
A. Okay. Certainly the first one at the top of the page, Evaluation of Human Health Risks, Inhalation of VOCs, Volatile Organic Compounds, During Excavation of Contaminated Soil.
Q. Is that relating to a different site?
A. Yes.
Q. Which site is that?
A. This one would be naval air station, Jacksonville, Jacksonville, Florida, and I believe those are the only two that deal with cancer risk.
Q. Okay. And one is in 1993 and the other is in 1994; is that right?
A. Yes.

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Q. Are they both abstracts?
A. Yes.
Q. And do they deal with risks other than risks for cancer?
MR. DUNCAN: Objection. Vague.
A. I'm sorry? What do you mean by risk other than cancer?
Q. (By Mr. Stolper) Well, the title of the first one, say, in 1993 is "An Evaluation of the Human Health Risks Due to Inhalation Exposure of VOCs During" --
MR. DUNCAN: I'm sorry. Counsel, what page are you on?
MR. STOLPER: I'm on page 7 where both of them have been identified.
Q. (By Mr. Stolper) I believe where we're referring to is the first one on the top of page 7 and the third one from the top on page 7; is that right?
A. Yes.
Q. Let's start with the first one, the one at the top of the page, "An Evaluation of the Human Health Risks Due to Inhalation Exposure of Volatile

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24 Organic Chemicals During Excavation of Contaminated
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1 Soil." You said that that was site-specific; right?
2 A. Yes.
3 Q. At that site, what were the folks that
4 were at that site exposed to or at risk of, let me
5 clarify that?
6 MR. DUNCAN: Objection. Vague. I'm
7 sorry, Counsel, when you say folks at the site, are
8 you talking about workers or what are you talking
9 about?
10 Q. (By Mr. Stolper) Okay. You said that you
11 had done a risk assessment at that site; is that
12 right?
13 A. Yes. We calculated the risk of that
14 site, yes.
15 Q. Okay. And you said one of those risks
16 was for cancer?
17 A. Yes.
18 Q. What were some of the other things that
19 people at that site were at risk of besides cancer?
20 A. Noncancer.
21 Q. You said "noncancer"?
22 A. Noncancer.
23 Q. Okay. What do you mean by "noncancer"?
24 A. It's a CERCLA term, chemicals are divided
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1 into two groups: carcinogens and noncarcinogens.
2 There are cancer risks and noncancer risks.
3 Q. Okay.
4 MR. DUNCAN: Perhaps, Counsel, are you
5 asking what the noncancer risks were?
6 MR. STOLPER: Yeah.
7 MR. DUNCAN: All right.
8 A. Boy, that was a long time ago. I just --
9 I don't remember what the actual results of the
10 calculations were. I'm sorry. It was, what, seven
11 years ago.
12 Q. (By Mr. Stolper) That's fair enough. But
13 as part of that risk assessment, you did identify
14 specific chemicals that were both cancer-causing and
15 noncancer-causing?
16 A. Yes.
17 Q. Okay. Do you recall roughly the number
18 of cancer -- the number of chemicals that fell into
19 the cancer category versus the noncancer category?
20 A. No, I don't. I'm sorry.
21 Q. Do you recall the ratio?
22 A. No.
23 Q. What about the risk of cancer versus the
24 risk of noncancer?
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1 MR. DUNCAN: Objection. Vague.
2 A. No.
3 Q. (By Mr. Stolper) How about in 1994?
4 MR. DUNCAN: Objection. Perhaps you
5 should make that a complete question.
6 MR. STOLPER: You're too fast for me,
7 Tom. My questions come out slower than you're
8 thinking.

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Q. (By Mr. Stolper) I was going to finish that up and say the 1994 article, that relates to a different site; right?
A. Yes.
Q. Okay. And, again, at that site you had -- were you -- you said that there was risk of cancer at that site?
A. We calculated cancer risk at that site, yes.
Q. Did you calculate risk of noncancer at that site?
A. Yes.
Q. Same series of questions: Do you recall the number of chemicals in the noncancer category versus the cancer category?
A. No, I don't. I just don't remember.
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Q. Okay. None of your publications relate to risk associated with smoking; is that right?
A. Correct.
Q. None of your publications relate to risks associated with asbestos exposure?
A. That's correct.
Q. And none of your publications relate to the risks associated with the joint exposure of asbestos and cigarette smoke; is that right?
A. That's correct.
Q. In your teaching at University of Mississippi and at Florida A & M, you've never taught -- well, let me -- have you given any lectures that relate to risks associated with cigarette smoking?
A. No.
Q. Any lectures relating to risks associated with asbestos exposure?
A. No.
Q. Any lectures on the risks associated with the joint exposure to asbestos and cigarette smoke?
A. No.
Q. As part of your education, did you have any experience in -- well, let me start over.
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As part of your educational experience, did you study the risks associated with smoking?
MR. DUNCAN: Objection. Vague.
A. I don't understand when you say as part of my education.
Q. (By Mr. Stolper) Well, you have a Ph.D.?
A. Yes.
Q. You have an undergraduate degree in chemistry?
A. Yes.
Q. In either one of those formal educational experiences, did you study risks associated with smoking?
MR. DUNCAN: Same objection. But go ahead to the extent you can, Doctor.
A. Risks were not part of any -- either of those education processes, no.
Q. (By Mr. Stolper) Did you study tobacco as a -- as part of your -- prior to your retention in

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this case, have you ever studied the toxicology of tobacco?
A. No.
Q. Prior to your retention in this case, have you studied the toxicology of asbestos?
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A. No.
Q. Prior to your retention in this case, have you studied the toxicology associated with the joint exposure to asbestos and cigarette smoke?
A. No.
Q. And I realize in this case you've given opinions that relate to both tobacco and asbestos, but before we get to the substance of those opinions, I'd like to spend a little bit more time on background-related questions.
Your firm since 1994, incorporated in 1998, you say you're self-employed. That means you generate an income from clients?
A. Yes.
Q. Okay. Can you describe your client base?
MR. DUNCAN: Objection. Vague. Are you asking for a list of all his clients?
Q. (By Mr. Stolper) You can itemize them in a brief -- in a brief way.
MR. DUNCAN: First of all, I object, I don't see how that's reasonably calculated to lead to the discovery of admissible evidence.
Q. (By Mr. Stolper) You can answer, unless you're being instructed by your nonlawyer not to
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answer the question.
A. Could you repeat the question?
Q. The question is I'm trying to get a sense of your client base.
MR. DUNCAN: Go ahead. Doctor, to the extent that you can.
Q. (By Mr. Stolper) You've mentioned you've done some work for the Navy; correct?
A. Yes, that's correct.
Q. Have you done work for other military? I think you said you did some work at a marine base.
A. Okay, the company that has the prime contract for this was known as ABB, ABB Environmental Services. They were the prime contractor under a contractor known as Clean.
Q. C-l-e-a-n?
A. C-l-e-a-n.
Q. Cute.
A. I can tell you what that means.
Q. It's a contract with the military?
A. It's with the Navy and Southern Division in Charleston, South Carolina.
Q. Okay.
A. Then -- and that's where I worked for a
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number of years.
Q. When did that contract go into place?
A. It was '89 or '90.
Q. Okay. So it's before you became

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self-employed?
A. Yes.
Q. Were you an employee of ABB?
A. I'm sorry?
Q. Were you an employee of ABB?
A. When?
Q. In 1989.
A. Oh, no.
Q. What was your affiliation? You said the prime contract was with ABB.
A. ABB has the prime contract to study Navy bases.
Q. Okay.
A. In 1992 I joined them to do toxicology and risk assessment as they ramped up to actually conduct these risk assessments.
Q. When you say you joined them, you became an employee?
A. Yes.
Q. Okay.

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A. And then they changed names as Harding Lawson -- I believe it was in 1988 -- and one of the differences is that when they became Harding Lawson -- when they were ABB, people couldn't leave and then come back as a subcontractor for them. They had a specific exemption against that. Harding Lawson didn't have that, and so when they became Harding Lawson, I left the company and went full-time with Dulaney Toxicology and then subcontracting back to them.
Q. Okay. I may have gotten confused in the dates. I think you had said in '89 the contract came into being with the Navy, between ABB and the Navy; is that right?
A. Yes.
Q. At what year did ABB become Harding Lawson?
A. I believe it was 1988.
Q. '88?
A. Right. I'm sorry, '98, 1998. I'm sorry.
Q. That's the confusion.
A. I'm sorry, 1998.
Q. So they become Harding Lawson in '98?
A. Uh-huh.

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Q. So you were an employee of ABB through 1998?
A. Correct.
Q. 1998 you leave them and incorporate your own company?
A. A company that's been going since '94.
Q. Okay. So you had the company going and you were also working for ABB?
A. Yes.
Q. Were you doing something different with the company than what you were doing for ABB?
A. You mean with Dulaney Toxicology?
Q. Yes.
A. Yes.
Q. What were you doing with Dulaney

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Toxicology?
A. That was exclusively litigation toxicology.
Q. Okay.
MR. DUNCAN: Counsel, perhaps to save some time, you asked about the clients of the firm which is what he was answering, or you have a list of the litigation, certainly, side of that there on page 7 just to --
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MR. STOLPER: Are you referring to...
MR. DUNCAN: Correct, it's at the page -- what would be page 10 of the --
MR. STOLPER: Facts?
MR. DUNCAN: Correct.
MR. STOLPER: Which is -- page 10 which is a list of your litigation experience?
THE WITNESS: Yes.
Q. (By Mr. Stolper) And the only differences or incompleteness to this list are the case you referred to that you're working on. You just submitted a report a couple weeks ago?
A. Yes. I have other cases that I have been asked if I will look into. I haven't done anything actively on them yet.
Q. Okay. And these are things you've been asked to do since March of this year?
A. Yes.
Q. Okay. Well, let me --
MR. STOLPER: Thank you for that, Tom.
Q. (By Mr. Stolper) I'll ask you a couple of questions about that in just a minute. So '94 to '98 you're working for ABB doing risk assessment for the Navy?
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A. Yes.
Q. Exclusively for the Navy?
A. Yes.
Q. During that same time period, you're doing some litigation work under Dulaney Toxicology?
A. Yes.
Q. Okay. What percentage of your time would you say you were devoting to ABB versus doing litigation work?
A. I don't know exactly what it is. Dulaney Toxicology was nights and weekends.
Q. That's for nights and weekends for most of the four-year period, '94 to '98?
A. Correct.
Q. Okay. Now, you leave ABB, then Harding Lawson, in '98?
A. Yes.
Q. They still have a contract with the Navy?
A. Yes.
Q. And you become a subcontractor to Harding Lawson?
A. Yes.
Q. And the -- what's the scope of your -- of the services provided under that subcontract?
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A. To provide the same services that I did when I worked for ABB: risk assessment, toxicology, and risk communication.
Q. And this is, again, for the Navy?
A. Now it would be -- to be perfectly clear, for Harding Lawson, who's then -- they're the prime contractor who -- then for the Navy.
Q. Right. But the work -- but the ultimate recipient of the work --
A. Yes, is the Navy.
Q. Okay. Nobody else?
A. Just Southern Division, right, for the Navy, right.
Q. Not that that's -- not to minimize the Navy in any way.
A. No. As long as you -- the Navy includes the Marine Corps.
Q. Okay. I learned that recently at a trip to Annapolis.
MR. DUNCAN: Counsel, would this be another good time for a break?
MR. STOLPER: Sure.
THE VIDEOGRAPHER: Off the record, time now is 11:19 a.m.

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(Brief recess taken.)
(Off-the-record discussion.)
THE VIDEOGRAPHER: Back on the record, time now is 11:28 a.m.
Q. (By Mr. Stolper) I promised you earlier that I'd ask you a couple of questions after each of the breaks we took. Did you have any conversations with the attorneys?
A. No.
Q. Okay. We were talking before the break about your firm and the -- your allocation of time between your litigation work and your other toxicology work.
Since '98 the nature of the work that you've been doing for now Harding Lawson has not changed from what you had been doing prior to '88 for ABB; is that right?
A. Except that I was a subcontractor as opposed to an employee.
Q. Okay. The reason -- I think you gave this earlier, and I apologize if you did, the reason for becoming a subcontractor as opposed to an employee?
A. I didn't give you a reason why I did

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that.
Q. Okay. Can I trouble you for a reason now?
A. I wanted to expand in areas besides risk assessment, and Harding Lawson didn't provide me with that opportunity.
Q. What are some of the areas you wanted to expand into?
A. I certainly wanted to move more into the practice of toxicology as opposed to focusing more in risk assessment.

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Q. What do you -- for the benefit of me and the jury, what does the practice of toxicology involve, as you just referred to?

MR. DUNCAN: Objection. Vague. But to the extent you can characterize it.

A. Well, it's applying toxicological principles to various situations, not just hazardous waste sites, but other sites, other types of situations as well.

Q. (By Mr. Stolper) Okay. Have you been able to do that?

A. Yes.

Q. Can you give an example?

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A. This case right here.

Q. So when you say you wanted to practice toxicology, did you mean you wanted to increase the amount of litigation work you wanted to do?

MR. DUNCAN: Objection. Mischaracterizes the testimony.

A. No, that's not what I mean at all. What I mean is in toxicology, to be a toxicologist, you have to -- you have the opportunity as a practicing toxicologist to do a number -- to evaluate a number of different chemicals, a number of different scenarios, not necessarily just hazardous waste risk assessment.

Q. (By Mr. Stolper) Okay. So you're broadening the types of agents that you're studying?

A. Not broadening. A toxicologist has to be able to deal with all the chemicals. It's -- you don't focus on an individual chemical. Practicing toxicologist deals with the entire group of chemicals.

Q. Okay.

A. So to have the opportunity to do that.

Q. Other than this case in the last two years, can you describe -- have you had

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opportunities to do work other than environmental or hazardous waste risk assessment?

A. Yes.

Q. Can you give some examples, other than this case?

A. Well, let's -- we can go through the litigation list.

Q. Is it all -- well, let me clear it up.

A. Okay.

Q. Prior to 1998, you had described your work as -- for ABB -- you had done work for ABB and you had done work under Dulaney Toxicology?

A. Yes.

Q. The work you had done for ABB had been risk assessment for Navy sites; correct?

A. Risk assessment, toxicology, risk communication, yes.

Q. The work you had done under Dulaney Toxicology you had described as litigation-related?

A. Yes.

Q. Since '98, other than the work that you're now doing for Harding Lawson as a

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subcontractor, is all the work that you're doing for Dulaney Toxicology in the context of litigation?

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A. I'm sorry. The first part, I missed the first part of your question, what was it now?

MR. STOLPER: You want to read it back?

(Whereupon, the requested portion of the record was read by the reporter.)

A. Yes.

Q. (By Mr. Stolper) Okay. Looking at -- there's no page number, but I'm looking at the two pages that -- that are titled "Dulaney Toxicology, Inc., Litigation in the Past Five Years."

A. Uh-huh.

Q. Do you see those two pages?

A. Yes.

Q. The first case that's identified in 1998 is Bouldin v. Chrysler Corporation. Do you see that?

A. Yes.

Q. Is that a case -- when you were retained to do that case, Bouldin v. Chrysler, were you an employee or subcontractor to Harding Lawson?

A. I don't remember when the actual case came in.

Q. Is it fair to say that looking at the --

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the ten cases listed from 1998 through 2000 would reflect all of the work that you've done for Dulaney Toxicology since '98, other than the current case, which isn't identified?

MR. DUNCAN: Objection.

A. I'm sorry? You're asking me what now?

Q. (By Mr. Stolper) Let me back up a second. You had said you wanted to branch out in 1998 and practice toxicology.

A. Expand my practice in -- right.

Q. You wanted to expand your practice in toxicology, and I'm trying to get a sense as to what you've done to do that, and you've testified that all the work that you've done for Dulaney Toxicology since '98 is in the litigation context?

A. No. You asked me the question of in addition to what I did for the Navy.

Q. Yes.

A. Dulaney Toxicology does both risk assessment and litigation.

Q. Right. Risk assessment for the Navy?

A. Yes.

Q. Okay.

A. Risk assessment, toxicology, and risk

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communication for the Navy, yes.

Q. For the purposes of the next few questions, I'm really focusing on your nonNavy work.

A. Yes.

Q. Okay. It's all litigation, and I'm trying to get a sense if this list is -- accurately reflects all of the work that you've done since '98.

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MR. DUNCAN: Objection. Is that a question?
Q. (By Mr. Stolper) NonNavy work.
A. You're asking me is this a complete list of my nonNavy work?
Q. Yes.
A. This is a list of my nonNavy litigation work, yes.
Q. Okay.
MR. DUNCAN: I'm sorry. Counsel, just so the record's not so muddled, are you asking him what all his work is, or are you referring specifically to the litigation work?
MR. STOLPER: Well, I think he's testified that other than the Navy work, all of his work for Dulaney Toxicology is litigation work. So I'm just trying to get a sense of -- I'm trying --
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Q. (By Mr. Stolper) The question -- let's make this simple. I'm trying to figure out what else you do besides the Navy work.
You said it's litigation, and I just want to make sure, okay? If I want to know everything you do other than Navy work, I'm looking at it right here on this page. And I'm looking at the ten or so matters that you've identified on the sheet.
A. Uh-huh.
Q. Is that right?
A. Is this everything else that Dulaney Toxicology does?
Q. Yes.
A. Is this what you're asking me?
Q. Yes.
A. Well, no.
Q. What else does Dulaney Toxicology do?
A. Well, as a business, we have to do business development; we have to do advertising; we have to do -- tried to generate more business.
Q. Okay.
A. So that's certainly a part of being a small business.
Q. Okay. I didn't mean to -- okay. I
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understand there's business development; there's administrative tasks, etc.
A. Uh-huh.
Q. Services for clients, the work you do, when you perform as a toxicologist, you said you wanted to practice toxicology?
A. Right.
Q. We're talking about that. I don't want to really get sidetracked into running a business, per se, but I'm really trying to understand from your background perspective what you've done since '98 as a toxicologist.
And other than your Navy work, what you've done as a toxicologist are the -- is the work you've done in the cases identified on these two pages dated since 1998; is that correct?
A. Yes.
Q. Okay, good. My apologies for taking so

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long to establish that one point.
I see that you've got a case identified here, Ezell Thomas v. R.J.R. Reynolds (sic) and the law firm is Shook, Hardy & Bacon. Do you see that reference?
A. Yes.
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Q. You were retained by Shook, Hardy & Bacon?
A. Yes.
Q. What is the Ezell Thomas v. R.J.R. Reynolds (sic) matter?
A. That is another litigation involving tobacco and asbestos.
Q. And under action or product produced, you have identified scientific literature and medical records reviewed. Do you see where this says that?
A. Yes, uh-huh.
Q. Is the scope of the -- did you do the same thing in the Ezell Thomas case that you've done in this case?
MR. DUNCAN: Just a minute. Objection. Of course this has not been cross-noticed for Ezell Thomas, so to the extent that you want to go into detail about that, I think that would be improper.
MR. STOLPER: Are you going --
MR. DUNCAN: That's my objection.
Q. (By Mr. Stolper) Okay. I don't -- I don't intend to probe too deeply about a case I know nothing about, Doctor. I just want to get a sense
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as to the work you're doing, and the question I asked was really to contrast the work you're doing in that case to the work you're doing in this case. Is there any difference to the work you've done in that case to the work you've done in this case?
MR. DUNCAN: Objection. Vague.
A. What do you mean in terms of differences? Could you be clearer?
Q. (By Mr. Stolper) All right. Let's start with this. You don't have this matter listed -- the Falise matter is not identified on this list of cases that you've worked on; is that right?
A. That's correct.
Q. If you were to list it, what words would you put under the column "Action or Product Produced"?
A. For Falise?
Q. For Falise?
A. Certainly scientific literature and review of scientific literature and expert report, and also I have reviewed some medical records associated with this, and now it would be after the end of today, it would be deposition.
Q. Okay. So in the Ezell Thomas case you
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have not issued an expert report?
A. I don't believe so.
Q. Have you testified?

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A. No.
Q. Is that the only other case involving a tobacco company that you're involved in?
A. I'm doing nothing for tobacco companies.
MR. DUNCAN: Counsel, I will -- go ahead and finish your --
THE WITNESS: I'm done.
MR. DUNCAN: Objection to the extent that you're asking him what he's consulting in. This is a list of litigation matters, but if -- I would object to you asking about any cases he's looking at or consulting on.
Q. (By Mr. Stolper) Well, the Ezell Thomas case, do you know if you're serving as a consulting or testifying expert?
A. I haven't had any discussions about that yet.
Q. Have you been asked to testify in that case?
A. No.
Q. Have you been identified to the -- well,

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you've been retained by Shook, Hardy & Bacon?
A. Yes.
Q. Do you know who retained them in that matter?
A. I don't have the complaint, so I'm not sure.
Q. Do they -- is it your understanding that they represent a tobacco manufacturer?
A. Yes.
Q. So do you know if you've been identified to the plaintiffs in that case as an expert?
A. I do not know.
Q. In five of these matters, you refer to -- let me draw your attention to the case, Cuevas v. Dupont. Do you see that, third one down?
A. Cuevas v. Dupont, yes.
Q. You say the way you described your action or product produced you have scientific review. Do you see that?
A. Yes.
Q. Under the Ezell Thomas case you have scientific literature and medical records review. Do you see that?
A. Yes.

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Q. What's the difference between scientific literature review and scientific review that you have identified under Cuevas?
A. There's no real difference in the term.
Q. Just the typing?
A. Well, no. This would -- this is an ongoing list that I add to as new cases come on. I -- it's just a change of terminology.
Q. But it's the same task?
A. Yes.
Q. So if you were retained for the Cuevas case today, you would have put scientific literature reviewed?
A. It's interchangeable.

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Q. Okay.
A. In my opinion.
Q. On the Nunnery case, which is the fifth from the bottom of the page --
A. Yes.
Q. -- you describe what you've done there as scientific literature, medical records review, and opinion letter. Do you see that?
A. Yes.
Q. Is that any different from -- strike
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that.
So you've done, looking at your list, you've done a scientific literature review for five cases; is that right?
A. For cases that I've been asked to do that, yes.
Q. Okay. Have you been asked to do that in cases that aren't identified here?
MR. DUNCAN: Objection.
A. I'm sorry. Are you asking me are there cases on here that I -- that I haven't listed?
Q. Okay. You've done scientific literature -- literature review in five cases; is that right?
MR. DUNCAN: Objection. Mischaracterizes the testimony.
A. The action produced by what the client has asked me for in five cases, included a scientific review, yes.
Q. (By Mr. Stolper) Okay. Have you done scientific reviews in any other -- as a toxicologist for a client in any other -- in instances other than the five that are identified here?
A. You mean did I do something that I didn't
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put down, is that what you're asking me?
Q. No, no. You've identified five instances here where you've done a scientific literature review.
A. Yes.
Q. In the thirteen years that you've been practicing toxicology, have you done a scientific literature review in any other instance besides the five that are identified here (indicating)?
A. Okay, when you include the thirteen years, you're including areas when I was working for ABB and Harding Lawson?
Q. Yes.
A. And certainly I would do it for particular cases. Especially if I'm going to go into an area for risk communication, I want to be as well-versed on what is known about the toxicology so I can honestly tell people, you know, what I know about it. I don't have to guess at it.
MR. DUNCAN: Counsel, just so the record's clear, when you're counting up the five, of course, you did mention Falise. So I assume you'd be counting to six in that since you asked him.
MR. STOLPER: Thank you for that
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clarification.
Q. (By Mr. Stolper) Prior to 1998, you described your work for Dulaney Toxicology as being weekends and nights. Did that change after 1998?
A. It become a full-time job, yes.
Q. Let me clarify. Your nonNavy work for Dulaney Toxicology, prior to 1998, you had worked for ABB?
A. Yes.
Q. And you said -- and you worked -- you did work at the same time for Dulaney Toxicology, but you did that on nights and weekends; right?
A. Yes.
Q. Now that you've become a subcontractor to Harding Lawson as of 1998, are you -- the litigation work that you've done since 1998, is that still being done on nights and weekends?
A. That's kind of a mischaracterization. Dulaney Toxicology, when it was first being formed, was a small company. We were trying to build it and the only time I had available was nights and weekends. When I became Dulaney Toxicology, Incorporated, full time, I spent my entire full-time working on Dulaney Toxicology.
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Q. I understand that, but when it became incorporated in 1998, you were doing work for the Navy; isn't that right?
A. Yes. That's part of it.
Q. Okay. And you're also doing litigation work?
A. Yes.
Q. I'm just trying to understand how much time you're spending doing Navy work versus nonNavy work since 1998.
A. In time I just don't know.
Q. Okay. But before 1998 you had described it as nights and weekends. Your Navy work was dominating your schedule during the week?
A. Yes. I worked full time for ABB and then on nights and weekends, that's when I do Dulaney Toxicology.
Q. Okay. Is the same true after 1998?
A. No.
Q. Okay. How has it changed?
A. It's a full-time job now. Dulaney Toxicology is my full-time occupation.
Q. I understand that legally you're now not an employee. You're a subcontractor. You've
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incorporated. But as --
A. No --
MR. DUNCAN: Counsel, are you asking what his work schedule is every day? Like when he works on Navy stuff and when he works on other stuff?
Q. (By Mr. Stolper) That's all I'm talking about, practicing toxicology.
A. You've kind of mischaracterized. It's like asking a person if they have two jobs.

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MR. DUNCAN: Just answer the question.
A. I'm trying to answer the question. I don't know what my actual percentage is. I mean, between Navy and -- and litigation.
MR. DUNCAN: Counsel, just -- are you asking what he does on a given day? What he works on and what hours he works on it? Is that what you're interested in or break out of time because I think we're getting confused.
MR. STOLPER: What I'm talking about is a breakout of time. I don't think it was --
A. I just don't have that information, I'm sorry.
Q. (By Mr. Stolper) Do you bill Harding

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Lawson on an hourly basis for your work?
A. Yes.
Q. And you bill your litigation clients on an hourly basis; correct?
A. Yes.
Q. Is the rate -- your hourly rate the same?
A. No.
Q. Does it -- is it the same -- do you charge all your litigation clients the same?
A. Yes.
Q. What's your rate?
A. 150 an hour for review and preparation and then 200 for trial and deposition.
Q. Okay. How much do you charge the Navy through Harding Lawson?
A. $100 an hour.
Q. Okay. Maybe we could do this in monetary terms. So all of your income since 1998 is derived from billing either the Navy through Harding Lawson or through litigation clients; correct?
A. Yes.
Q. I don't want to invade your privacy, because I don't think it's particularly relevant to know how much money you make a year, but I am trying

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to get a sense as to how much time you spend doing litigation work versus time you do for the Navy. And you've struggled with trying to quantify that, so perhaps I can ask you in terms of monetary dollars. Do you know since 1998 how much money you've derived from your work for the Navy?
A. Since 1998?
Q. Yeah, since incorporating Dulaney Toxicology.
A. No, I don't.
MR. DUNCAN: Counsel, perhaps you could ask him as a percent of income or something like that.
Q. (By Mr. Stolper) That was the next question I was going to ask. If you made $100 a year, how much of that money would come from litigation versus your work for the Navy?
A. This is going to be -- best I -- I really don't know what it is. I don't know if you want me to -- anything I'll give you would just be a guess. I really don't know.

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Q. Do you know which you make more money from, the Navy or the litigation clients?
A. Oh, the Navy, yes.

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Q. You make more money from the Navy?
A. Yes.
Q. Significantly more money from the Navy?
A. What do you mean by significantly?
Q. If you -- if you were to lose the Navy contract or your subcontract through Harding Lawson, if you came home and told your wife, Honey, we lost the Navy contract, our salary just -- we just lost a third of our income, half of our income, three-quarters of our income. Honey, we're moving into the poor house.
MR. DUNCAN: Incomplete hypothetical, but go ahead, Doctor.
Q. (By Mr. Stolper) You can move in with Tom is the last example, but...
A. You're asking me over several years, and I just don't remember what it is from 1998, I just don't remember.
Q. Let's do today. Let's do 2000.
A. As of last year, for example?
Q. Yes, for fiscal year '99, which you probably just paid taxes just a few months ago.
A. Yes. Litigation would have represented about 10 to 15 percent.

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Q. Okay.
A. That's a rough estimated --
Q. Believe me, I'm not calling the IRS.
A. Okay.
Q. Is that -- do you recall whether '98 fiscally was different -- '99 was fiscally different from '98 for Dulaney Toxicology?
MR. DUNCAN: Objection. Vague.
A. I just don't remember. I just don't remember.
Q. (By Mr. Stolper) Okay. In the seven months of 2000 so far, would you say that -- are things proceeding fiscally along the same line as '99?
A. I actually have less idea of that now than I did for '99, because I've turned all my billing over to my wife and my accounting -- and my accountant. So I -- I don't even -- I'm afraid I have less knowledge of that for this year than I did from last year.
Q. Okay.
MR. STOLPER: What time do you have?
MR. DUNCAN: 12 noon.
(Off-the-record discussion.)

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Q. (By Mr. Stolper) Let's see what we can cover in five minutes. As a toxicologist, have you applied for any research grants?
A. No.
Q. Doing work for the Navy, have you had to issue reports?

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A. Yes.
Q. What kind of reports?
A. Risk assessment reports. Could you clarify this more in terms of your time frame?
Q. Has that changed over time?
A. Yes.
Q. Okay. You tell me when did it change so we can -- I don't want to shoot in the dark as to when things changed. Are you talking about pre'98, post'98?
A. Yes.
Q. Let's focus on pre'98. What kind of reports did you issue?
A. Risk assessment reports, and then we did a number of novel studies at a particular base, at the naval construction battalion center, Gulfport, which were -- we did a community survey, and then I also wrote a RCRA de-listing petition.

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Q. That's all pre'98?
A. Yes. Risk assessment reports and then those two specialized reports.
Q. Okay. And then post'98?
A. Risk assessment reports for various sites and risk communication support and toxicology support. Those are more verbal than written.
MR. STOLPER: Can I have the last answer he just said?
(Whereupon, the requested portion of the record was read by the reporter.)
Q. (By Mr. Stolper) You said support not report. Risk communication support?
A. Yes.
Q. What kind of information is in a risk assessment report? Let me clarify that. Let's take an example -- take an example from pre'98 for the Navy. You did a risk assessment report at Albany, Georgia. What kind of information would be in that report?
MR. DUNCAN: Objection. Vague.
A. Okay, it's -- there's usually not a stand-alone risk assessment, so it truly is a very vague question.

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Q. (By Mr. Stolper) The risk assessment report is subsumed in other information?
A. In a larger report, yes.
Q. Okay. So you'd be writing a piece of the report that would be included in a larger report submitted to the Navy?
A. Yes.
Q. Let's just focus on your piece of the report. Well, did you have any involvement in the preparation of other portions of the report that would be submitted to the Navy?
A. I need more information on what you mean by preparation.
Q. Okay. Pre'98, ABB would submit a report for a particular site to the Navy; correct?
A. Yes.
Q. You were responsible for preparing the

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risk assessment portion of that report; correct?
A. Yes, uh-huh.
Q. Okay. Were you responsible for any other portions of the report that would be submitted to the Navy? What did you do with the reports that were submitted to the Navy?
A. Okay, I was responsible for much more
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than just the risk assessment report.
Q. Okay. Describe your responsibilities.
A. If you remember the four-step process, you have to collect information to support the risk assessment, so you have to be able to identify what your data needs are, establish your sampling plan to meet those data needs, evaluate whether that is adequate to meet your data needs, and then -- and this can be an iterative process, and then you can take that information and plug it into step No. 1 of the risk assessment process.
THE VIDEOGRAPHER: This concludes tape No. 1. The time now is 12 p.m.
(Off-the-record discussion.)
(Brief recess taken.)
Q. (By Mr. Stolper) Those -- the four-step process you were just describing, it's all support for the risk assessment report; isn't that right?
A. I'm sorry. The first step of the process is to collect the information necessary to -- to carry out the other steps, yes.
Q. Right. But all four steps. You said -- I'm just trying to clarify something. You had said your responsibilities went beyond the risk
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assessment portion of the report.
A. Yes.
Q. Then you went on to describe four steps that you took. Did I --
A. No, you missed --
Q. Then maybe you can clarify those, because I misunderstood.
A. You asked me earlier the four-step process of risk assessment, No. 1 is make certain that you can collect the data to carry into it.
Q. All right. I'm going to write this down so I don't -- collect data. Step 2?
A. Identify receptors.
Q. Step 3?
A. Toxicology. That's the cancerous load factors and reference doses, toxicology information for the chemicals that you've identified in step 1.
Q. Step 4?
A. Calculate the risks and present the risks.
Q. Present the risks in a report format?
A. Yes.
Q. Okay. So the question I was posing, in order to prepare a risk assessment report, you need
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to go through steps 1 through 4; correct?
A. Yes.

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Q. Okay. When you're done with steps 1 through 4 and you submit the report --
A. Uh-huh.
Q. -- that portion of the report, the risk assessment portion of the report that was ultimately submitted to the Navy, that's what you were responsible for; correct?
A. Yes.
Q. Okay. Were you responsible for other portions of the report that were submitted to the Navy other than the risk assessment portion?
A. At one site, yes.
Q. Which site?
A. This would be the Naval Construction Battalion Center, Gulfport, where I served as the overall technical lead for the entire project.
Q. Okay. In that capacity, you were responsible for the entire report submitted to the Navy?
A. Yes.
Q. Is that the only time you had to do that?
A. That was the only site I was the
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technical lead, yes.
Q. Do you know why you were the technical lead on that particular site?
A. (Shakes head.) No.
Q. Over your -- throughout your work for the Navy, you've submitted to them several reports; correct?
A. Yes.
Q. Okay. Just trying to get a sense of volume, how voluminous is a typical risk assessment report that you've submitted to the Navy or the risk assessment portion of the larger report submitted to the Navy?
A. That's completely dependent on the size and the complexity of the sites.
Q. Can you give a range, 5 pages, 100 pages, 1,000 pages?
A. I mean the range -- it could -- it's many hundreds of pages.
Q. It's never less than several hundred pages?
A. I have never written a risk assessment that was smaller than -- including the documentation to support all this -- several hundred pages.
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Q. You reference computer modeling on page 1 of your report?
A. Yes.
Q. Do you recall that?
A. Yes, uh-huh.
Q. What do you mean by computer modeling?
A. Literally to use computer mathematical concepts to try and describe a situation.
Q. Is computer modeling an area of expertise within the toxicology field?
A. I'm sorry? I didn't understand your question. When you say within the toxicology field, I'm not sure what you mean.

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Q. Is computer modeling something that toxicologists do?
A. Some of them do, yes.
Q. Is that something you learned how to do in getting a Ph.D. in toxicology?
A. Some of them do, yes.
Q. Did you?
A. No.
Q. How did you learn computer modeling?
A. I learned it at the Army.
Q. When were you at the Army?

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A. During my postdoctoral fellowship at the United States Army Research Institute of Chemical Defense.
Q. Is that in your CV?
A. I think so.
MR. DUNCAN: Page 2.
A. At the top of what's designated as page 2.
Q. (By Mr. Stolper) What did you do at the Army?
A. That was the Army institute that was developing anecdotes to chemical weapons and in that context I worked to help develop anecdotes to chemical weapons.
Q. You did that for three years?
A. Yes.
Q. That's where you learned computer modeling?
A. Yes.
MR. DUNCAN: Counsel --
MR. STOLPER: Perfect time to take a break.
THE VIDEOGRAPHER: Off the record, time now is 12:09 p.m.

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(Off-the-record discussion.)
(Brief recess taken.)
THE VIDEOGRAPHER: Back on the record, time now is 12:52 p.m.
Q. (By Mr. Stolper) Good afternoon, Dr. Dulaney.
A. Good afternoon.
Q. At varies times this morning, we were talking about your work in the context of litigation. It looks here from the list contained in your CV that that work began in 1995?
A. Yes.
Q. First case listed here is Brenda Gail Ritzer, et al. v. Mississippi Leasing?
A. Yes.
Q. Do you see that?
A. Yes.
Q. Is that the first case -- first litigation that you were retained in?
A. Yes.
Q. How did you come about being retained in that matter?
A. I believe Franke Rainey (sic) called me and asked me if I would be interested in looking

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into this case and that's really all I remember. I mean, that was quite a while ago. But I do remember Franke Rainey (sic) -- I believe he was -- he was the contact point -- I'm sorry. Not Frank -- it was Bill Rainey, I'm sorry, he was my contact point and that's really about all I remember.

Q. Did you know him from...

A. No, huh-uh.

Q. Do you know how he got your name?

A. No, I don't.

Q. He asked you to get involved in litigation?

A. I -- I guess the gist of it was -- was that, certainly.

Q. And you agreed obviously?

A. Uh-huh.

Q. Okay. Your list identifies law firms. Were you in each of the cases that you've worked on, you've been retained by law firms?

A. Yes.

Q. In all these cases, did you represent the defendants?

A. No.

Q. Which cases were you -- were you working
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on behalf of the plaintiff?

A. For plaintiffs, okay, Clolinger and Crosslin.

Q. That's the fourth case down?

A. Versus Chevron, yes, Dooley in Dooley v. Textron; Nunnery in Nunnery v. Mississippi Gas; Thomassie in Thomassie v. King Ranch, George Trepal --

MR. DUNCAN: Well, wait a minute. Those are criminal cases, aren't they, Doctor?

THE WITNESS: Okay, I'm sorry.

MR. DUNCAN: He asked for plaintiffs.

THE WITNESS: Okay, I'm sorry.

Q. (By Mr. Stolper) With the exception of the Ezell Thomas case about which you testified this morning, are all these other cases that you've identified, all the civil cases on your list relating to hazardous waste?

A. No.

Q. Which ones don't relate to hazardous waste?

A. In the context of hazardous waste, are are you meaning in terms of a CERCLA or RCRA action? What do you mean by hazardous waste?
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Q. I'm just picking up your terminology from this morning.

A. Okay.

Q. You said you've done a lot of work in the context of hazardous waste and wanted to broaden your practice of toxicology into things other than hazardous waste.

So I -- I'm just trying to differentiate here your cases between those relating to hazardous waste

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and those not relating to hazardous waste as you used the term this morning.

A. Okay. All of them are involved with chemical exposure. Some are associated with hazardous waste sites in the term that I used; some are involved in more of a -- the best way to describe this is a workplace exposure or something like that.

But in the context of, like, a hazardous waste dump or something like that, it would be, I believe, Ritzer v. Mississippi Leasing was a hazardous waste site.

Dooley v. Textron was a hazardous waste site, Smith v. Chevron, it's not a hazardous waste site, but it's derived -- waste derived from oil -- from

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oil exploration.

Q. Let me stop you there for a minute.

A. Okay.

Q. Maybe the quickest and easiest way through this is if you can give the 30-second description of each of the cases you've got listed here. And we'll start with the Brenda Gail Ritzer case. What did that involve?

A. I just remember that it was -- your asking me about hazardous waste reminded me that it was -- I believe it was a RCRA action, but that's really all I remember about it. It was five years ago, and I believe -- it was a RCRA action on a landfill. That's all I remember about it.

Q. Okay. How about the next case?

A. I don't remember anything about this one.

Q. That's the Mallie Hershel Jeanes?

A. Right, versus Cubicon.

Q. Okay.

A. Cuevas v. Dupont was a Dupont herbicide that Mr. Cuevas was exposed to, was sprayed with and he was claiming damages.

Q. And you represented Dupont in that case?

A. Yes.

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MR. DUNCAN: Objection to the characterization of represent.

A. I guess I'm sorry. I didn't represent anyone.

Q. (By Mr. Stolper) The next case down is Clolinger and Crosslin v. Chevron?

MR. DUNCAN: That's Clolinger, I believe.

Q. (By Mr. Stolper) Okay.

A. Clolinger and Crosslin v. Chevron, I believe that was hydrogen sulfide exposure in workers.

Q. That was a current spill or exposure?

A. It was an exposure at a refinery. That's mostly what I remember about it.

Q. Okay. And how soon after that exposure were you -- did you get involved?

A. I just don't remember.

Q. Okay. The next one down is Bouldin v. Chrysler?

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A. Yes. The law firm asked me to -- Mr. Boulden was a ranch hand, one of the people that were highly exposed to Agent Orange during Vietnam, and they wanted me to do some review of the

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ranch-hand studies to see whether or not his disease was associated with his prior Dioxin exposure.

Q. You say under action or product produced for the Boulden case, you list -- you identified as Dioxin epidemiological research?

A. Yes.

Q. Can you explain what you meant by that description?

A. The ranch-hand study is a series of studies of Vietnam veterans, an epidemiological study of these veterans that were exposed to Agent Orange during Vietnam. So I reviewed this information for them.

Q. And for whom did you review that information?

A. For the law firm.

Q. Who did the law firm represent?

A. It wasn't Mr. Boulden, so I assume it was Chrysler.

Q. Okay. What conclusions did you reach in reviewing that information?

A. I don't remember finding anything in the literature to support their position, the position of the people that asked me -- that Dioxin was

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associated with his disease. But I don't remember what his disease was.

Q. How did you reach that conclusion?

A. That was based on the epidemiology studies of the ranch hands, and what they specifically asked me was the question of whether his ranch-hand exposure in the epidemiology studies would be supported as a causation.

Q. And the epidemiology studies didn't support that conclusion?

A. There wasn't any mention of incidents of that disease process in these -- so that's what I had to tell them.

Q. Okay. In that instance you were not critical of the epidemiological studies?

A. No. I was simply asked to review it.

Q. Okay. The next case down is J. Kinson Cook v. Pyramid Masonry. Do you see that?

A. Yes.

Q. What did that case involve?

A. I just don't remember. No, I'm sorry. I do -- Pyramid Masonry, that was mold in air conditioners would represent a toxic -- would represent -- would it result in any toxicity?

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Q. And who asked you to look into that?

A. Law firm, I can't even remember who the attorney was. It wasn't one of these names (indicating).

Q. Did they represent a party in the case?

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A. Yes, but I don't remember which one it was.
Q. Do you remember your conclusions?
A. The scientific approach that they used was poorly-designed, and the conclusions that another independent air group had come up with couldn't -- I couldn't come up with those based upon their information. They did not use a good scientific approach.
Q. In that case, that involved a contemporaneous exposure of mildew in air-conditioning units?
A. I believe that was the issue, yes.
Q. You came in to review somebody else's analysis or assessment of that exposure?
A. Yes.
Q. The Easter Smoot case. Do you see that?
A. I think it's pronounced Smoot, but yes.
Q. What was that case about?

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A. This Ms. Smoot exposed herself to the Holiday Bug Bomb and was claiming health effects. That's the name of the product.
Q. We can move right past that one. Dooley v. Textron?
A. Textron had disposed of a number of solvents on their property that had later migrated to Mr. Dooley's property, and I was able to demonstrate that the solvents were actually moving up into his buildings and people or his tenants were being exposed to this.
Q. Is this through groundwater contamination?
A. Yes. Groundwater and then it was leaving the groundwater moving into the air.
Q. This was a contemporaneous exposure?
A. I --
Q. What I mean, you were asked to assess a situation that was ongoing at the time you were assessing it?
A. Yes.
Q. And for whom -- on whose behalf were you working in that case?
A. Mr. Dooley.

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Q. The next case down, Smith V. Chevron?
A. Yes, this case is pretty much on hold right now. From what I remember of it, I believe it involves waste derived from drilling activities.
Q. I'm going to skip the -- the Ezell Thomas case. We've already talked about that. We can always come back to it. Holmes v. Entergy?
A. Pardon me if I have to think about this for a second. Mr. Holmes was -- he worked for Entergy. He reconditioned transformers and I believe the chemical involved was -- were PCBs.
Q. For whom -- for whose behalf were you working in this case?
A. Entergy.
Q. And your assignment?
A. To determine whether or not the -- his

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exposure resulted in his -- the disease process.
Q. You were retained in 1999?
A. Yes. The entire case took place in '99.
Q. When was Mr. Holmes employed by Entergy?
A. I just don't remember.
Q. Was it at the time that you were investigating?
A. No. He had passed away.
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Q. What were your conclusions?
A. I don't believe I came to any conclusions here.
Q. How come?
A. I think the case was settled before I even produced a final -- a report.
Q. Did you work on the case?
A. Yes.
Q. You had begun your investigation?
A. Yes.
Q. What did you do?
A. In this case I looked at the list of potential chemicals that he had been exposed to, and I looked at his disease process -- I don't remember what the disease was -- and tried to see whether or not they were -- whether they were incidents in the medical literature that would support that did -- the chemical did cause the disease or conversely that there was no information to suggest that a chemical doesn't cause the disease.
MR. STOLPER: Can I have that back?
(Whereupon, the requested portion of the record was read by the reporter.)
MR. STOLPER: Read back the last --
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(Whereupon, the requested portion of the record was read by the reporter.)
MR. STOLPER: That was what was confusing me.
Q. (By Mr. Stolper) The converse of causing disease is to not cause disease; right?
A. No.
Q. Why not?
A. Because there are two possibilities: One is it doesn't cause the disease and the other is there's not enough information to determine whether it causes the disease or not.
Q. So in other words, there's two -- there's two options: It doesn't cause it or there's insufficient information to know whether it causes the disease?
A. Well, as a toxicologist, when you enter a situation, I always enter it as there are three possibilities: One is the science supports it, the second is the science refutes it, or the third is there's not enough information to make this determination.
Q. And your conclusion in that case?
A. I don't think I came to one. I think it
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settled before I came to a final conclusion.

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Q. Okay. I think we're up to the Nunnery case which you've mentioned briefly.
A. I'm sorry. Did I mention briefly?
Q. Can you describe again the Nunnery case?
A. Nunnery was carbon monoxide. The Nunnery family were exposed to carbon monoxide from their heater, and there was one fatality and the mother was affected and the child was very much affected.
Q. What was your role or assignment?
A. Reviewing the toxicology of carbon monoxide and trying to determine whether the exposure to carbon monoxide could have resulted in the endpoints.
Q. Meaning death and disability?
A. Correct.
Q. When was this exposure?
A. I don't remember when it was.
Q. Is it in the 1990s?
A. Oh, yes.
Q. Was it around the time -- did your investigation take place shortly after the incident or the exposure?
A. By -- I don't know what you mean by
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shortly.
Q. Within a year.
A. Probably. I mean, that's -- that's about the best I can do there.
Q. Okay. On whose behalf were you acting in that case?
A. Nunnery.
Q. The folks who were injured?
A. Yes.
Q. And your conclusions?
A. It -- their signs and symptoms, including death, and this case the autopsy reports were perfectly consistent with carbon monoxide poisoning.
Q. Cook v. Pyramid Masonry?
A. Actually, I think this is -- this is the same thing. Wow, I've seen this so many times. I never realized it. This is the same case as James Kinson Cook v. Pyramid Masonry.
Q. Same, yep, except the year is different.
A. Yeah, the year's different. I don't understand how this happened. I have looked at this thing -- I'm sorry, I've looked at this thing many times and I've never seen that. Thank you.
Q. So we can chalk that up to a typo?
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A. Yes, I'm sorry.
Q. That's okay. Thomassie v. King Ranch Oil?
A. In this case there -- a valve failed and oil got into people's drinking water in their houses and they were claiming health effects for this. They -- and I was asked to determine whether there was a causation associated with this.
Q. Who asked you?
A. In this case I was on the Thomassie side.
Q. The plaintiff's side?
A. Yes.

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Q. The folks who were injured?
A. Yes.
Q. Your conclusions?
A. Their short-term symptoms were consistent; their long-term symptoms and claims were not.
Q. What were their short-term symptoms?
A. Dizziness, headache, nausea, I believe those were the major -- eye irritation.
Q. When you say the long-term symptoms were not consistent with the endpoint, what were the long-term symptoms?

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A. In this case, they claimed continued headache, continued breathing difficulties, and that's just not consistent with the scientific literature.
Q. What did the scientific literature say?
A. The short-term exposure -- the short-term symptoms were consistent. It causes dizziness, headache, nausea, these kinds of things. But studies in workers for long-term exposure doesn't support this.
Q. What did it support?
A. It --
MR. DUNCAN: Objection.
A. What do you mean, what did it support?
Q. (By Mr. Stolper) Well, you said their symptoms were inconsistent with what the literature said.
A. Right. It was an acute exposure that there would be no long-term results from.
Q. The literature said there shouldn't be any symptoms and these people continued to present with symptoms?
A. Yes.
Q. You issued a report in that case?

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A. Yes.
Q. Were you asked to testify?
A. I believe I did a deposition, yes.
Q. When was that?
A. It was after this was produced (indicating).
Q. So after March of this year?
A. It's -- I believe it was April or May.
Q. Having gone through your civil cases, is it fair to say that all of the toxicology exposures that you were asked to look into were contemporaneous or relatively recent exposures in terms of your investigation?
A. What do you mean by relatively recent?
Q. You were asked to investigate exposures that had taken place shortly before you had conducted your investigation.
A. Yeah. As a toxicologist, it really doesn't make much difference whether it occurred, last year or ten years ago or twenty years ago. I mean, the toxicology's going to remain the same.
So in this situation what we're talking about are litigations, you know, for present exposures or

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24 in the recent past, yes.
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1 Q. There's no difference in conducting a
2 historical investigation as opposed to an
3 investigation of something that took place within a
4 few months of your investigation?
5 A. In terms of the toxicology of it, the
6 toxicology wouldn't change. People haven't changed.
7 The toxicology of a chemical is not going to change
8 whether the exposure occurred ten years ago or
9 twenty years ago or yesterday.
10 Now, the end result may, especially for
11 chemicals for carcinogens, for example, that might
12 very well be different. But for what I'm looking at
13 here and for chemicals that are toxic in the acute
14 situation, that's not going to change.
15 MR. DUNCAN: Counsel, let me see if I
16 can clear something up here. You asked a couple
17 times during a question, contemporaneous. Are you
18 contrasting contemporaneous from recent past or are
19 you talking about just recent past?
20 MR. STOLPER: No. I'm really -- for
21 clarity sake, I've lumped contemporaneous and recent
22 past sort of together.
23 Q. (By Mr. Stolper) I'm drawing a
24 distinction between historical investigations versus
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1 current or -- you know, investigating exposures
2 within a year of the exposure as opposed to ten
3 years or twenty years after the exposure.
4 MR. DUNCAN: I just want to make sure
5 you weren't asking -- are you talking about
6 exposures that are ongoing while he's investigating.
7 That's what you meant, apparently, by
8 contemporaneous.
9 Q. (By Mr. Stolper) Okay. Lump that
10 together with recent. I'm just trying to draw --
11 A. Are you asking me is the toxicology
12 different?
13 Q. No, I'm asking you is your
14 investigation -- the steps you take to investigate
15 to do a risk assessment, you've laid out four steps,
16 there are things you do as a toxicologist to
17 investigate.
18 I guess what I'm -- it all boils down to -- the
19 question it boils down to is: Is there a
20 distinction in your methodology between conducting
21 an investigation of an exposure that happened within
22 a year or so of your investigation as opposed to an
23 exposure that took place ten years ago or twenty
24 years ago?
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1 A. Stepwise process that I use as a
2 toxicologist would not change, no.
3 Q. In all the cases that we've run through,
4 you were acting on behalf of one party or another in
5 a particular litigation. Did you ever offer an
6 opinion that conflicted with the party for whom you
7 were working?
8 MR. DUNCAN: Asked and answered.

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Q. (By Mr. Stolper) You can answer.
MR. DUNCAN: You can go ahead and answer.
A. When you say the party for whom I'm working --
Q. (By Mr. Stolper) The party on whose behalf you're working. There's a plaintiff, there's a defendant in each of these cases. You worked -- through the law firm, you worked for one of those two parties in all these cases.
A. No, huh-uh. One of the things that I make very clear with the law firms is, I'm not working as an advocate for either side. I'm working as a scientist to evaluate the toxicology and that process never changes.
If my conclusion is different from what a
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client -- their client is saying, the law firm's and my client, if their client is saying something different, then my report will stand as it is.
Q. Well, I understand. I'm just asking, are there any instances where your report differed from the interests of the client?
A. You mean my client?
Q. Yes.
A. Okay.
Q. Yeah.
A. You mean of the law firm?
Q. The law firm or people they represent.
A. See, I separate those two.
Q. I understand. But obviously you're in litigation. Here you're in this litigation. Mr. Duncan represents a tobacco company in this case; correct?
A. Right, but the tobacco company is not my client.
Q. Okay. I understand the distinction you're drawing. You realize you're offering an opinion in this case; correct?
A. Right.
Q. And you realize that your opinion is
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consistent with the interests of the tobacco companies in this case; correct?
MR. DUNCAN: Objection.
A. I'm sorry. That's -- that's completely wrong. My opinion is mine from review of the literature, and if it is -- and I present that information to the law firm. If they choose to use it in the litigation, that's their choice, but it won't impact my --
Q. I'm not -- I'm not suggesting that you're changing your report to make it consistent with the interests. I'm just asking a very -- a threshold question.
Has your report ever -- I'll simplify it. Has a law firm ever chosen not to -- the law firm that's retained you in any of these cases -- chosen not to utilize your report after you issued it?
A. I don't know of any instances that that's the situation. In the most recent Thomassie v. King

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Ranch, I provided my opinion that short-term was consistent, long-term was not. If that contradicted with what the plaintiffs were saying or the interests of the law firm, that -- that's up to them.

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At no time would it change my opinion what the position of the law firm was.

Q. In each of these cases, do you -- that you've been retained in, is it your practice to get a copy of the complaint in each of those cases?

A. It's -- no, it's not my general practice. Sometimes I do; sometimes I don't.

Q. Do you generally find out what the case is about?

A. I'm sorry?

Q. In each of these cases, do you tend to find out what the claims or allegations that are made in each of the cases?

A. I need to know what the toxicity that's being claimed is, and I need to know what the chemical is. I need to know what the chemical exposure is, so I need to get as much of that information as possible. It's part of the four steps stepwise process that I use in coming to my toxicological conclusions.

Q. How do you decide on whether or not to get involved in a particular case?

A. You mean in terms of is there a particular process?

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Q. Yeah.

A. I have one overriding criteria, and that is that I provide my scientific opinion. If someone tries to tell me I want this to be your scientific opinion, then I'll just pass.

Q. Has that ever happened?

A. Yes.

Q. How many times?

A. It's happened one time.

Q. Did it relate to tobacco litigation?

A. No.

Q. Asbestos litigation?

A. No.

Q. Have you ever turned -- other than that instance, have you ever turned away an offer by an attorney to hire you for a particular case?

A. To offer my scientific opinion, no.

Q. So other than that one instance, every time an attorney's called you up and asked for help in that case, you've accepted that business?

A. I give them the criteria that I've just told you, and then if they agree, then I'll take the case.

Q. Okay. None of the cases other than the

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Ezell Thomas case involves tobacco; is that right?

A. Correct.

Q. And none of the cases other than the Ezell Thomas case involves asbestos?

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A. Correct.
MR. DUNCAN: Of course, Counsel, including the case that we're currently discussing.
THE WITNESS: Sorry, right.
Q. (By Mr. Stolper) Are there any other cases besides the Falise matter and the Ezell Thomas case that you have been retained in that relate to either asbestos or tobacco?
A. No.
Q. I'd like to ask you some questions about your retention in this case.
When were you first retained?
A. About a year ago.
Q. Who retained you?
A. I'm sorry. That -- that's not right. For this particular case, it was -- I guess it was maybe five or six months ago.
Q. That would be around January, February?
A. Yes.
Q. January or February?

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A. I don't remember the exact time.
Q. But --
A. Somewhere in that time frame, right.
Q. You were -- you were called by an attorney?
A. During a meeting where we were discussing the Ezell Thomas case, Mr. Duncan accompanied another attorney and asked me if I'd be interested in looking at this case as well.
Q. Is Mr. Duncan involved with you in the Ezell Thomas case?
A. He's -- I had not met with him for that case.
Q. First time you met Mr. Duncan was in this case?
A. Yes, uh-huh.
Q. Who were you dealing with -- which attorneys are you dealing with in the Ezell Thomas case?
A. Bernie O'Neil has been the attorney that I've been dealing with the most in Ezell Thomas.
Q. Mr. O'Neil's at Shook, Hardy & Bacon?
A. Yes.
Q. Same firm as Mr. Duncan?

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A. Yes.
Q. Back a step --
A. I'm sorry?
Q. I'm going to take you back a step.
A. Okay.
Q. When were you retained in the Ezell Thomas case?
A. I guess it was about a year ago.
Q. And Mr. O'Neil called you up?
A. He called me, wanted to know if we could talk. We talked in general terms about toxicology, how I carried out my practice, and then later he called and asked if I would be interested in looking into this.
Q. Did he say how he found you or knew of

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you?
A. I believe it was via my postdoctoral mentor, Dr. Arthur Hume.
Q. Can you spell that?
A. H-u-m-e.
Q. Dr. Hume had some relationship with Mr. O'Neil?
A. I believe they had worked together on a case.

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Q. At some point subsequent to your initial conversation with Mr. O'Neil, he offered -- he asked you if you could help him in the Ezell Thomas case?
A. Who do you mean by he?
Q. Mr. O'Neil.
A. Yes. He called me and said would I be interested in providing my scientific opinions for the Ezell Thomas case, yes.
Q. Did he describe the case to you?
A. Not at the time, no.
Q. When did you learn about the case?
A. During subsequent meetings with Mr. O'Neil.
Q. And you say that's a case that involves tobacco and asbestos?
A. Yes.
MR. DUNCAN: Counsel, to the extent that we're taking a deposition of Falise, I would object to questions on the Ezell Thomas case. This is not cross-noticed for Ezell Thomas.
Q. (By Mr. Stolper) So you first found out about this case in meeting Mr. Duncan?
MR. DUNCAN: Object. This case being Falise?

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MR. STOLPER: Falise.
Q. (By Mr. Stolper) You first found out about the Falise case when meeting with Mr. Duncan?
A. Yes.
Q. And who else was at that meeting?
A. Mr. Crader -- was Mr. O'Neil, Mr. Crader, and Mr. Duncan, I believe.
Q. Who's Mr. Crader?
A. Scott Crader there (indicating).
MR. STOLPER: Oh, sorry, Scott.
Q. (By Mr. Stolper) That was sometime, January/February of this year?
A. Yes.
Q. And at that conversation, was the case -- the Falise case described to you?
A. Yes.
Q. And how was it described?
A. They wanted my opinion as to whether there was -- in the literature of whether there was an interaction between asbestos and tobacco.
Q. Did you have an opinion in January/February of this year?
A. No.
Q. Did you have any knowledge of the synergy

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to which they were referring?
A. I believe I had seen some literature talking about that, but no firsthand epidemiological knowledge, no.
Q. Did they ask you for anything else?
MR. DUNCAN: Objection.
A. I'm sorry?
Q. (By Mr. Stolper) In that initial conversation.
A. I just don't remember.
Q. Remember anything else about that initial conversation?
A. Nothing, no.
Q. Did they tell you what the Falise case was about?
A. I got that more with subsequent investigation or more meetings with them, right.
Q. How many meetings have you had in the Falise case with the attorneys from Shook, Hardy?
A. Maybe four.
Q. And over the course of those meetings, you said the case was described to you?
A. The case was described to me, yes.
Q. Okay. Can you tell me the sum and
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substance of those conversations about how the case was described to you?
MR. DUNCAN: Objection. But to the extent that you can describe it, are you asking what the case -- what he knows the case is about?
Q. (By Mr. Stolper) I'm asking you what you were told what the case was about.
A. I'm trying -- I mean, you're asking me to recall specific conversations, and I'm trying to -- trying to do that. That there was a claim that -- that there was an interaction between smoking and asbestos. And sometime during the conversation, during one of the meetings, there was -- there was a lawsuit involved with this.
Besides that, I don't remember any specifics. I told them what I would need to get this done, and they said -- you know, the kind of scientific information that I would want to look at and -- and basically that's when I started working on this.
Q. When you said -- when you said you identified the things you need to get it done --
A. Uh-huh.
Q. -- the things to which you are referring are the types of information you would need?
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A. Yes. I was going to have to do a literature survey; I was going to have to review, as a toxicologist, as I said, the stepwise process where you collect as much information as you can. You find out what this information tells you, and then from that you base your opinion.
Q. Did you discuss -- this is in the initial conversation?
A. Yes. I tell people up front the process that I'm going to use.
Q. Did you give a cost estimate?

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A. No.
Q. Have you ever given a cost estimate?
A. I never have. Not for a litigation process, no, I never have.
Q. In your practice over the five years you've been doing litigation?
A. Correct.
Q. Were you asked about cost?
A. No, other than what was -- what was my fee.
Q. And, again, your fee is an hourly basis?
A. Yes.
Q. Any other charges or expenses?

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MR. DUNCAN: Objection.
Q. (By Mr. Stolper) You can answer.
A. Direct charges, library fees, things like that. If I have to travel, travel fees, reasonable travel fees, things like that. Besides that, no.
Q. If we just stick with the process point, so to speak, the work you've done since being retained in the case. You said you've met with the attorneys for approximately four times?
A. I believe that's true.
Q. Okay. Did you conduct a literature search?
A. Yes, I did.
Q. What else did you do besides a literature search?
A. I basically reviewed all of the information from that literature search. I collected the papers. I was able to evaluate them along several different lines, the animal studies, the epidemiology studies, background studies, things like that.
And studied all of that information as part of the toxicological process, yes.
Q. So is it -- just to understand the types

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of things you did, you've met with the lawyers four, five times; you did a literature search, and you reviewed the literature that you -- that you retrieved?
A. Yes. And then always as part of my stepwise process, I also try to collect as much information I can about the case, and so I asked for that as well.
MR. DUNCAN: Will this be a good time to take a break?
MR. STOLPER: Two questions left.
MR. DUNCAN: Sure.
Q. (By Mr. Stolper) What kind of -- what are the kinds of things you asked for to learn about the case?
A. Medical records, if they were available, and then also if there was any possibility of conducting, say, a site visit. As much information as I could about the case so I would be able to make a toxicological evaluation.
Q. So when you say information about the case, you're not thinking -- you're not talking

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about legal papers and legal arguments and claims.
You're talking about factual predicates, factual
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information?
A. Factual information, yes.
Q. What kind of information did you receive in response to your request for information about the case?
A. I received some medical records, and I did receive -- there were some papers that I had some difficulty finding, and so I was able to get a couple of those, but that's about it. The rest of the material I collected myself.
Q. Did you ask for any materials from the -- from the tobacco companies themselves?
A. No.
Q. Did you ask for any of their internal research?
A. No.
MR. STOLPER: I guess now would be a good time to take a break.
THE VIDEOGRAPHER: Off the record, time is 1:28 p.m.
(Off-the-record discussion.)
(Brief recess taken.)
THE VIDEOGRAPHER: Back on the record, time now is 1:37 p.m.
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A. Mike, one thing after talking with Mr. Duncan, I want to clear up one area of confusion in my -- in my deposition and that is if -- if anyone came to the conclusion that I first started looking at the smoking/asbestos/synergy issue the first part of this year, that would be incorrect. I actually started looking at it at the Ezell Thomas case, which was a year ago.
This just happened to dovetail into that very nicely, so if there is any impression that I just started looking at this at the first part of this year, then that's inaccurate. I just wanted to clear that up.
Q. (By Mr. Stolper) Well, thank you for that. I'll take it that was the gist of your conversation with Mr. Duncan?
A. Yes.
Q. Is that something he reminded you of?
A. He suggested that I may have been unclear in this area and just -- just to clearly establish that.
Q. Okay. I'm sure he realizes that that now welcomes some more questions into the Ezell Thomas case, but how --
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MR. DUNCAN: Counsel, I would not agree with your representation and you know that.
Q. (By Mr. Stolper) How -- how does your work in the Falise matter relate to the work that you had done beginning a year ago in the Ezell Thomas case?
A. Looking at the interaction of smoking and

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asbestos in both the human and -- in the human and the animal literature.

Q. You had done that in both cases?

A. Yes.

Q. Okay. If you had done it in the Ezell Thomas case, did you need to do anything differently or in addition to what you had already done when you were retained this year in the Falise case?

A. No. It turned out that very similar issues, so --

MR. DUNCAN: Counselor, to be clear, are you talking about in the review of the literature, or are you talking about other things that are the same or different from the case?

MR. STOLPER: Well, I've asked him what he's done. He said he reviewed literature. We've already established what the scope of his work

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is, so I don't think --

MR. DUNCAN: He's testified as to several things he's done. That's one of them or that he wanted to do in the case, including review of scientific literature. I just want to make sure that was clear.

Q. (By Mr. Stolper) Okay. I'll make sure it's clear now.

A. Okay.

Q. I think what you've described -- in the Falise matter, I believe you've testified that you reviewed literature; you reviewed documents that you asked for and were provided to you.

A. Yes.

Q. And you assessed those two universes of documents, met with attorneys, and reached conclusions, not necessarily in that order. But those are the things that you've done in this case, other than now sit here and take -- give deposition testimony?

A. Now, I've certainly reviewed the scientific literature as it relates to the issues here. We're talking smoking. We're talking about asbestos, the interaction between the two, the

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toxicology associated with that, the toxicological processes.

In addition I asked for medical records and reviewed the medical records, so that is an area of addition. I also asked if there was any potential for doing a site visit, and it turns out that that's -- that's not really possible or feasible.

Q. Anything else?

A. I think that's it.

Q. Okay. Now, if you began looking -- the literature review that you did in Falise -- well, did you do a separate literature review in Falise? And I say separate, meaning something separate and different from what you had done in the Ezell Thomas case?

A. No.

Q. So were you able to avoid having to do any literature review in Falise because you had

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already done so in the Ezell Thomas case?
MR. DUNCAN: Objection mischaracterization of avoid. But go ahead, Doctor, you can answer the question.
A. I did a very large literature review covering many different areas, so I wasn't -- I
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didn't have to get -- do an additional literature review, no.
Q. Did you have to do any additional or supplemental analysis of the literature in the Falise case than what you had already done in the Ezell Thomas case?
A. Well, I haven't -- okay, the analysis process is exactly the same. As a toxicologist, you go through the same process. The issues were very similar, so those were very much the same. I did review additional medical records that were available from this and to incorporate that, so there are -- that was a difference in my process.
Q. Okay. So the only thing that you did specifically in the Falise case that you didn't do in the Ezell Thomas case is review the medical -- the medical records that were provided to you in the Falise case?
A. That I haven't done in the Ezell Thomas case, yeah, that's correct.
Q. Okay. Did you issue a report in the Ezell Thomas case?
A. I don't believe I have done that yet. I did submit a report to Shook, Hardy & Bacon. I
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don't know if it's been submitted yet or not.
Q. Okay. The report that you gave to Shook, Hardy & Bacon, how different is it from the report issued in the Falise case that we've marked as Exhibit No. 1?
MR. DUNCAN: Objection. I think now we're beyond the pale. I think now you're trying to depose him on the Ezell Thomas case. This is not the place to depose Dr. Dulaney in the Ezell Thomas case.
MR. STOLPER: Are you instructing him not to answer the question?
MR. DUNCAN: I'm asking you why you're trying to depose him in the Ezell Thomas case. I don't think this is a proper forum for it. Do you intend to go down this Ezell Thomas line of questioning much further?
He says he has not submitted a report or no report has been submitted in the case, and now you want to know what he wrote in a draft of a report in Ezell Thomas? Is that what you're asking?
MR. STOLPER: I just want to know if the report he gave you is the same as this report that we've got in our case, unless you are
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instructing --
MR. DUNCAN: Well, and you have my objection. Doctor, if you remember whatever your --

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you can go ahead and answer it, but that will be about it on Thomas, I hope.

A. Without having them side by side, I couldn't tell you if they were exactly the same or not.

Q. (By Mr. Stolper) Did you write -- Exhibit 1, your report in the Falise case, did you write it?

A. Oh, yes, of course.

Q. Is it a computer file that you have?

A. Yes.

Q. When you gave -- at some point in time, you gave this report, Exhibit 1, to the Shook, Hardy lawyers?

A. Yes, I sent it to them.

Q. Did you give it to them electrically or hard copy?

A. Hard copy.

Q. Did they make any changes?

A. I don't know how they -- how they could have made any changes to this.

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Q. Did they offer you -- did they make any suggestions, revisions, suggested revisions to you?

A. No.

Q. Did you provide them with drafts prior to your final report?

A. No. This was written pretty much in just one sitting.

Q. Okay.

A. So there weren't drafts.

Q. Okay. Did you write this before you wrote the report in the Ezell Thomas case?

A. Yes, I believe so.

Q. When did you -- when was that sitting? When did you sit and write this report?

A. You know, I really don't remember. It was in the springtime, but I just don't remember when it was.

Q. Okay. When did you conduct a literature review in the Ezell Thomas case?

A. It started a year ago, and has been going on ever since.

Q. You haven't concluded your literature review?

A. No. And with this much information and

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this much data, many times you have to go back and do this several times.

Q. Are you still going back and doing it over again?

A. Yes.

Q. Have you looked at -- have you done additional research since issuing this report?

A. What do you mean by research? I'm sorry.

Q. You said -- I'm sorry. You said you did -- you've done a literature review. Have you obtained additional scientific literature since March 16th of 2000, when you issued this report?

A. Now, you're talking about this case now?

Q. Let me clarify.

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A. Okay.
Q. We're just talking about the -- the literature review in the Ezell Thomas and in the Falise case, which both relate to, as you've described, smoking and asbestos?
A. Okay.
Q. And you said that that review is ongoing, even through today?
A. It's ongoing in the context of reminding myself of the information, because it's such a
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voluminous piece of information, so I keep reminding myself. I'm not reading things new.
Q. Okay.
A. My study's been completed, but it's such a large piece of information.
Q. Because I had asked you if you had completed your -- your literature review, and you said it was ongoing.
A. I'm sorry. I guess I just misunderstand you.
Q. So what you're saying is you're refreshing your recollection of the literature?
A. Correct.
Q. But at some point in time, your review came to an end; is that right?
A. Yes.
Q. When was that?
A. Prior to submitting this report. I'm not sure of the exact date. I just don't know.
Q. Okay. You said you asked for individual claims files in the Falise case?
A. Yes.
Q. Why did you think that would be relevant to your investigation?
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A. It's part of the toxicology process that I use, and it -- I want to get as much complete information as I can, so for completeness.
Q. As you sit here today, do you have an understanding as to the number of claims, individual claims that are at issue?
A. I recently discovered it was quite a large number.
Q. Do you have a sense as to what that number is?
A. I don't know what the exact number is.
Q. Rough ballpark.
A. I've heard various numbers. It's quite large. I mean, it may be in the hundreds of thousands. I just heard it's a very large number.
Q. And how did you discover that it was a large number?
A. I asked Mr. Duncan, you know, how many medical records would I need to look at if I wanted to look at the group, and he says it's quite a large number.
Q. Okay. Now, you were provided -- you asked for medical records in this case?
A. Yes.
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Q. And you were provided with medical records?
A. Yes.
Q. And I believe -- we won't mark it as an exhibit, but perhaps we'll show it off to the video man what was -- Mr. Duncan was kind enough to show me at a break was this lovely stack.
MR. DUNCAN: Why don't you let him hold it, and then it will be in focus.
A. I'm sorry. Yes, this is a stack of five medical -- or five medical records.
Q. (By Mr. Stolper) Okay. Did you ask for five medical records?
A. No. I asked for medical records -- when I found out it was a very large number, I asked for a representative group of it, and this was what was -- I was told that this is representative. It was randomly selected, and it gave me an idea of what medical information was available.
If you have any additional medical information, I would very much like to look at it, that would help me.
Q. Did you explain or describe what you meant by representative when you asked for
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representative files?
A. No. Representative.
Q. You used the term "endpoints" in your discussion today?
A. Uh-huh.
Q. Endpoints are disease endpoints?
A. Yes, they can be.
Q. Are you aware of the various disease endpoints or diseases that are at issue in this case?
A. The one that I focused on the most was cancer, lung cancer.
Q. Any others?
A. That was the area that I focused on was lung cancer and that was the endpoint that I focused on the most.
Q. Did you ask for claims files that were representative of lung cancer claimants?
A. No.
Q. What were they supposed to be representative of?
A. The records that were available.
Q. Did Mr. Duncan -- it's Mr. Duncan who provided you with those claims files?
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A. Yes.
Q. Did he explain how he selected those files?
A. No. They told me that they were randomly selected and that's basically what they told me.
Q. Did you review them?
A. Yes, I did.
Q. What did you find?
MR. DUNCAN: Objection. Vague. If you have some specific questions, or do you want him

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to go through each one? How would you like to do that?
Q. (By Mr. Stolper) Describe generally what you found in those files.
A. As a toxicologist, they don't provide me with information on dose of asbestos, which is a very critical component and they also -- they don't talk about any other potential exposures. We call these confounders. What else were these people exposed to that may have caused their diseases?
Q. And are these files, are these -- do you have an understanding as to whether or not those are medical files, work files, or any other type of files?

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A. My review of this shows that they have -- they're claims forms, many have medical -- or some have medical records, some more extensive than others. I don't -- the claims forms and the medical records are what these are mostly.
Q. Did you rely on those claims forms in formulating your opinions in this case?
A. No.
Q. Other than the claims forms, were you provided with anything else by the attorneys in this case?
MR. DUNCAN: Objection. Vague.
A. What do you mean by anything else?
Q. (By Mr. Stolper) Documents.
A. As I said earlier, there were a couple of papers that I had difficulty in obtaining, scientific papers.
Q. Do you know which papers?
A. No, I don't.
Q. Other than those papers and the claims files, anything else provided, any other materials provided by the attorneys?
A. I did receive some information from the work of Arthur Furst. I had not looked at those

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papers, and they did provide me with that -- with those papers.
Q. When did they do that?
A. I don't remember when that was.
Q. Did you ask for it?
A. I think I just said that -- that these -- I did not specifically ask for those papers, but they -- they had no impact on my toxicology. It certainly had an impact on part of my report that deals with Dr. Furst's work, but it had no impact on the toxicology or the synergy.
Q. Do you know why the documents were sent to you relating to Dr. Furst?
A. No, I don't.
Q. Did you ask when you received them why did you receive these materials?
A. I asked what they wanted me to do with them, and they asked if I would provide my scientific opinion on Dr. Furst's work.
Q. What kind of opinion were you asked to offer with regard to Dr. Furst's work?

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MR. DUNCAN: Objection.
THE WITNESS: I'm sorry?
MR. DUNCAN: No, go ahead.

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A. People don't ask me to provide my opinion on things. They ask me to provide my scientific opinion of his work, and beyond that, I draw the line. People just don't tell me what my opinion will entail.

Q. (By Mr. Stolper) Well, not -- I didn't mean to suggest that somebody was telling you what you should or shouldn't say. I'm just trying to understand the scope of the request.

When you say provide your opinion about the work, you could be opining on several different things with regard to Dr. Furst's work.

A. Oh --

Q. What was it that they asked you to look at?

A. The work that relates to this case, which would be the synergy issue.

Q. Okay. Was there particular questions posed to you with regard to Dr. Furst's work?

A. Just how -- how would this work? In my opinion, how would this work, if at all, would it relate to the synergy issue?

Q. Did the lawyers -- who asked you this, Mr. Duncan?

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A. Yes.

Q. Did Duncan -- Mr. Duncan share his view?

A. I just don't remember. I'm -- I just don't remember.

MR. DUNCAN: Objection. Share -- share my view? What is that? What specifically --

MR. STOLPER: About Dr. Furst, we're talking about Dr. Furst.

A. I don't remember him saying anything about that.

Q. (By Mr. Stolper) When they provided you with materials about Dr. Furst, did you ask for any additional materials with regard to Dr. Furst?

A. No.

Q. Do you know of Dr. Carchman (phonetic)?

A. No.

Q. Do you recognize the name in any way?

A. No.

Q. Are you aware that the tobacco companies employ toxicologists?

MR. DUNCAN: Objection. Lack of foundation.

Q. (By Mr. Stolper) You can answer.

A. Yes.

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Q. Did you know that at the time you were retained?

A. Oh, yes.

Q. You would imagine that the toxicologists that work for the tobacco companies would have a certain level of expertise with regard to tobacco?

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MR. DUNCAN: Objection. Calls for speculation.
A. I -- I have no idea what their levels of expertise are.
Q. (By Mr. Stolper) Does the Navy have any toxicologists?
MR. DUNCAN: Objection. Vague.
A. I -- I don't know of any. I just don't know. I don't know of any personally.
Q. (By Mr. Stolper) In any of the cases that you've worked on, did you ever work with any of the scientists employed by the clients on whose behalf you were working?
A. In any of the cases --
Q. Let me give you an example. You've done some work for Chevron?
A. Right.
Q. For the lawyers representing Chevron;

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correct?
A. Yeah -- let's see. Chevron would be not in Clolinger v. Chrysler.
Q. Smith v. Chevron?
A. Smith v. Chevron, no, I haven't worked with any Chevron toxicologists.
Q. Dupont?
A. No.
Q. Have you ever worked with toxicologists that were employed by the parties in the litigation you were involved in?
A. No.
Q. Did you ask to speak to any of the toxicologists that are employed by the tobacco companies?
A. No.
Q. Why not?
MR. DUNCAN: Objection.
A. I'm -- I'm -- I didn't think it was necessary. It was not necessary for me to tell them my conclusions. I've been a practicing toxicologist for quite some time.
Q. (By Mr. Stolper) Just to finish up a couple of procedural questions, Dr. Dulaney, you

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said -- well, let me ask you this: Do you have a rough -- how much have you billed Shook, Hardy for the Falise matter to date?
A. I believe it's about 14,000.
Q. And your rate's $150 an hour?
A. Uh-huh.
Q. And that's specifically for the Falise matter?
A. Yes.
Q. Okay. And how much have you billed in the Ezell Thomas case?
MR. DUNCAN: Counsel, once again, I object. This is not the Ezell Thomas deposition.
MR. STOLPER: Well, he's already testified that his research in Falise he did in the Ezell Thomas case, so it makes it very difficult for me to try to draw distinctions between the two.

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MR. DUNCAN: Doctor, to the extent you can answer that, go ahead.
Q. (By Mr. Stolper) So I'll restate the question for you.
A. Okay.
Q. How much have you billed in the Ezell Thomas case?
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A. I don't know the exact amount, it's less than that. It may be 10,000.
Q. Do you bill them regularly?
MR. DUNCAN: Objection. Vague, overbroad.
A. Do I bill them regularly?
Q. (By Mr. Stolper) How often do you bill Shook, Hardy & Bacon for your work in these two cases?
A. It's my practice to bill while I'm conducting the work, and if I'm not conducting work, I don't bill them.
Q. Okay. Do your bills itemize the tasks that you perform?
A. If that's requested.
Q. Is it requested here?
A. Just -- no, it's not.
Q. So you don't happen to have a sample bill with you?
A. No.
Q. Do you -- what kind of information would be contained in your bill, say, in the Falise case to Shook, Hardy?
A. I -- you mean --
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Q. Does it just say, "Bill, ten hours, $1500"? Does it say, "Bill, ten hours, went to the New York Public Library to research journals, $1500"?
A. No, my billing practice is if I did literature review, it would say "literature review." If it says "deposition letter," it will say "deposition letter," how much time is associated with -- with that practice. It's not broken down any further than that.
Q. Based on the amount of money you owe, you've billed -- I realize these are rough approximations -- but you've billed more money in the Falise case than in the Ezell Thomas case, but yet you testified earlier that the literature review on asbestos and tobacco smoke, you conducted that during your Ezell Thomas -- while working for the Ezell Thomas case as opposed to the Falise case.
MR. DUNCAN: Objection. Is there a question there, Counsel? Counsel, is there a question? I don't think there's a question pending, so I don't think he's going to be answering that one.
Q. (By Mr. Stolper) Can you explain the
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discrepancy in the billing?
MR. DUNCAN: Objection to the

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characterization of discrepancy.
Q. (By Mr. Stolper) You can answer.
A. What discrepancy?
Q. That's what I just described?
A. I'm sorry. I -- I missed that, could you read that back?
Q. I'll give you a parenthetical. I'll give you an explanation and then we'll go to the question.
You've testified today -- you've been asked to do a literature review about asbestos and tobacco.
A. Uh-huh.
Q. You were first asked to do it in the Ezell Thomas case, which began a year ago. You were asked in January/February to -- to do the same thing in this case, but as of January/February you had already conducted the literature review. And what you had done in the Falise case is you've asked for additional materials, and you've looked at some claims records, but that your review of the -- you concluded your review -- you concluded your literature review prior to January/February of this

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year.
MR. DUNCAN: Counsel, there's still no question.
MR. STOLPER: I'm just -- he's looking at me puzzled, which is why I stopped.
Q. (By Mr. Stolper) Did I say something that you disagree with?
A. When you're paraphrasing that I concluded my literature review for what case in January or February?
Q. The literature review you did for the Ezell Thomas case is identical to the literature review you did in the Falise case; correct?
MR. DUNCAN: Counsel, before we make this way too muddled, you have asked him several times what he studied, what he looked at when, in addition to a long colloquy about whether or not he looked at -- whether or not he continued to look at literature and what purpose he looked at it for.
So then saying that there's a discrepancy in billing and asking him to explain it doesn't make any sense at this point.
MR. STOLPER: Okay. I think you just muddled things further, but --

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A. I'm sorry. I'm completely lost now, perhaps --
Q. (By Mr. Stolper) Okay. Well, let me just -- I started to clear this up by asking, you've done a literature review. You've looked at asbestos and tobacco and literature relating to the joint exposure of asbestos and tobacco; correct?
A. Yes.
Q. That began while you were working on the Ezell Thomas case?
A. Yes.
Q. And there came a point in time where that literature review -- you concluded that literature

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review; correct?
A. Correct.
Q. And subsequent to that, you have continued to refresh your recollection and continued to consult that literature, but there did come a point in time when you concluded your review; correct?
A. Yes.
Q. Okay. And the point in time you concluded that review was prior to being retained in January/February of 2000; correct?

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A. No.
Q. When did you conclude your literature review?
A. You're mixing two cases that have the same time frame. When I was doing the work for Ezell Thomas, it was at a much different pace than it was for Falise because of the time frame difference.
When I started in January, I went back to the very beginning and started and reviewing the information for Falise. And so my Falise review started in January when Mr. Duncan said I'd like you to look at this information.
Q. Okay. Let's break up the review, because maybe that's where we're having a problem. When you do a literature review, you have to first go find the literature; correct?
A. Correct.
Q. Did you find the literature or did the lawyers find the literature?
A. I found the very vast majority of the literature.
Q. With the exception of a few you couldn't find?

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A. Right.
Q. Okay. When did you go about finding what you considered to be the relevant literature on tobacco and smoke -- on tobacco and asbestos?
A. That occurred last year.
Q. Last year?
A. Yes.
Q. So you identified and found physically copies last year?
A. Correct.
Q. Okay. And you had begun to review that literature last year?
A. Correct.
Q. Okay. And did you review everything you found?
A. I'm sorry?
Q. You found -- how many articles did you find, roughly?
A. Hundreds.
Q. Okay. Did you review every -- all of them that you found?
A. No.
Q. You skipped over some?
A. No.

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Q. Somebody else reviewed them?
A. No. What happened was I was told that the case was slowing down, and so there was a time frame at which I wasn't actually actively working on Ezell Thomas.
Q. Okay.
A. Then in January, Mr. Duncan came and said, "I'd like you to look at this information for -- for this case," so since it had been so long and I wanted to -- to refresh myself, I started from the beginning and in a very accelerated time frame, finished the investigation, which included going back to the beginning and going through the entire thought process from the beginning to the end again.
Q. Okay. So you reviewed all of the literature that you found in '99. You reviewed it again?
A. Right.
Q. You reviewed it in 2000?
A. Correct.
MR. DUNCAN: Wait a minute. You just asked two different things. You asked two things in the same question. So I want to make sure that the record accurately reflects that. You said reviewed
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it, and then you said reviewed it again, and he said yes.
Q. (By Mr. Stolper) You just -- we'll disregard the last question.
A. Uh-huh.
Q. The literature that you identified and collected in 1999 you reviewed in its entirety in 2000?
A. Yes.
Q. Okay. I now understand the billing. In reviewing the literature, did you take notes?
A. That's not my practice.
Q. What's your practice?
A. I read papers. I put them into stacks. I -- then I go back and rereview those stacks to see if I can come up with a pattern, and then many -- I may read a paper two, three, four times as part of this process.
Q. But you don't take any notes on any particular article?
A. No. I just have not found that to be useful.
Q. But the universe of documents that you're reviewing are hundreds, you said?
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A. That's correct.
Q. How -- you said you created stacks of this literature?
A. Yes.
Q. What are the -- what are the different categories and how did you segregate them?
A. Animals studies -- I'm sorry.
MR. DUNCAN: Objection. Compound. That's fine. I just want to get my objection.

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That's fine. Objection. Compound. Go ahead, you can answer.

A. Just to the basis that I can, it would be human, animal. Just in general it may work out to be what is the chemical? Are there any interactions? Things like that. And then I may break them into subgroups depending on what the papers say.

Q. (By Mr. Stolper) Okay.

A. This is just part of my general practice.

Q. General practice. Specifically in this case how did you break out the articles?

A. Human and animal.

Q. Right.

A. I also did look at smoking alone and

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asbestos alone and then looked to see if there were any papers that talked about either human interaction or animal interaction that weren't parts of the other -- of those other piles.

Q. Okay. I followed you till the very end. You had smoking alone, asbestos alone?

A. Right.

Q. And then you had what else?

A. Were there, for example, any studies, any laboratory studies of that interaction that weren't part of either epidemiological or laboratory animal studies. Were there human laboratory studies of that interaction? Are there animal laboratory studies of that interaction?

Q. So you had a different stack for animal studies regarding the interaction and a different stack for human studies with regard to the interaction?

A. Yes.

Q. Any other categories?

A. I think that covers it for this particular case.

Q. You had roughly four categories?

A. Four large categories, yes.

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Q. When you say you had hundreds of articles that you found, 100, 200, 1,000? Do you have a rough ballpark?

A. It's not 1,000.

Q. Are all the articles that you found identified in your -- under Exhibit C of your report?

A. No.

Q. What is Exhibit C of your report?

A. These are articles that I reviewed to come to my conclusions.

Q. Is this a subset of the universe of documents -- subset of the articles that you initially identified?

A. This is a subset of -- yes, of paper that identified in the literature search, yes.

Q. Okay. Can you walk me through the steps you took, starting with how did you go about identifying literature relating to asbestos and tobacco, joint exposure?

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A. First I conducted a literature search using those key words and tobacco, asbestos. I don't remember what the exact bullion expression was, but I know that I would have at one time looked

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at for interaction or synergy or anything like that, something to identify the paper when it was in the title or as one of the key words. I'm not sure what the -- the pure bullion search criteria was.

Q. And where were you searching, Med Line?

A. Med Line, Tox Line, there -- those two are some of the most powerful.

Q. Okay. And your search terms, again, were smoking, asbestos, did you use synergy?

A. I don't specifically remember. I may have used that word. I may have used interaction.

Q. Did you do the searches yourself?

A. No, I have those done. I mean, I give the actual criteria that I want to have done, but I don't do them myself.

Q. Who do you give them to?

A. I have a contract library that I use.

Q. Where is that person?

A. In Tallahassee.

Q. Did you give them the criteria -- your search criteria in writing?

A. Sometimes or I just give them orally.

Q. You e-mail?

A. I don't believe so.

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Q. In this case -- when I say in this case, I'm talking about this literature review. So obviously this was done -- your initial steps were done during the Ezell Thomas case.

Do you recall if you gave the search criteria in writing?

A. No, I don't.

Q. You don't recall one way or the other?

A. I don't recall, right.

Q. If you did, you'd keep it in your file?

A. Probably not.

Q. Would the librarian?

A. I don't know. You'd have to ask the librarian.

MR. STOLPER: Maybe I could ask the court reporter to mark the transcript so I could follow-up after the deposition with a letter to Mr. Duncan for that information.

Q. (By Mr. Stolper) So you gave some search terms that you can't remember specifically to the contract librarian?

A. I can't remember all the search terms that I looked at, so, I mean, that's not really accurate. I don't remember all the search terms

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that I used.

Q. Okay. But the ones you do recall as you sit here today, which ones are they?

A. Smoking, I'm sure I looked at smoking. I'm sure I looked at asbestos. I'm sure I used some

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interaction term. I may have used synergy. I may not have used synergy.

I may have used synergy and additive. I'm not sure what it was, and I don't remember if I specifically -- I certainly would have asked for human, but I don't know if I looked at -- if I asked for specific animal species or just animal in general. Beyond that --

Q. How do you go about deciding search terms?

A. Experience.

Q. What would have been the thought processes -- what was your thought process in deciding whether or not to use synergy or not to use synergy as a search term?

MR. DUNCAN: Objection. Since he doesn't even remember if he used it, it will be very difficult to parse out why he may or may not have done it.

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Q. (By Mr. Stolper) Do you recall?

A. I -- like I said, I don't remember if I used the term or not.

Q. Okay. As you sit here today, what are some of the reasons you would give to -- using the term or not using the term?

A. Well, if it was -- if I was going to focus on key words and I knew that this was a major key word, it might be something to go into, but it's -- that -- I mean, that's one possibility.

Interaction may give me more than the word synergy, because additive or antagonism won't hit if I only look at synergy. So I may go very broad, such as interaction and then if necessary, then focus down. So it's quite possible that I only used a term as broad as "interaction."

Q. How do you know if a search generates too many hits, is too broad? When you say it's too broad, does that mean it generates too many hits, too many hits that are irrelevant to you?

A. It generates a lot of hits where either the key words aren't matching or I'm missing what -- what key word -- there are certain key words that librarians use, and so I may -- I may miss -- for

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example, synergy, like you're talking about there, might miss interaction completely, so...

Q. If somebody else, the contract librarian is doing the actual searching for you, how do you know whether your search terms are sufficient or not?

A. Experience.

Q. So did you -- you gave the -- the search criteria to the contract librarian once and in response to that, you received a collection of the articles that resulted from that search?

A. Yes.

MR. DUNCAN: Counsel, would this be a good time for a break?

MR. STOLPER: Sure.

THE VIDEOGRAPHER: Off the record,

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time now is 2:31 p.m.
(Off-the-record discussion.)
(Brief recess taken.)
THE VIDEOGRAPHER: Back on the record, time now is 2:37 p.m.
MR. STOLPER: Can I have the last question read back?
(Whereupon, the requested portion of
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the record was read by the reporter.)
Q. (By Mr. Stolper) Instead of asking a bunch of questions, I think maybe on a -- I'm puzzled by your last answer, and I -- I'm going to give you a factual scenario and then follow it up with a question.
When I conduct a legal research, I go onto Lexis or West Law, and I conduct searches and I use search terms and I generate results. And more often than not my initial searches need to be refined in order to either narrow or broaden my results accordingly.
If you had only given search criteria once to your contract librarian and in response you were given search results, you, then, were prevented from either -- from refining your search; is that right?
A. No, not at all.
Q. How do you know that the search terms that you gave your -- what's the name of your contract librarian?
A. HSRI.
Q. So it's a company?
A. Yes.
Q. HSRI?
A. Uh-huh.
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Q. How do you know that the search terms or search criteria that you gave HSRI retrieved what you would consider an optimal amount of topical literature?
A. How do I know?
Q. Yeah.
A. Well, one of the things that you learn through experience is dealing with my databases, is if you want to get anything -- everything on the first shot, you want to stay with general terms. You do want to say things like smoking. You want to say things like asbestos. You want to say things like human and that's how you do it.
Now, you may end up with a lot of information, but that's how you do it.
Q. You could also lose out on things that are very specific that don't necessarily carry the general terms; isn't that right?
A. The more general you are in our databases -- the more general you are, you're going to pick it up.
Q. Did you identify particular journals that needed to be searched?
A. No. That would be too specific.
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Q. So Med Line covers all scientific and

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medical journals?
MR. DUNCAN: Objection.
A. I don't know what all Med Line does.
Q. (By Mr. Stolper) Well, I'm trying -- I just want to understand the search criteria that you gave. We talked about search terms --
A. Sorry.
MR. STOLPER: Do you need the witness to move to the left or the right?
THE WITNESS: The witness will not move.
MR. DUNCAN: Counsel, I think part of the confusion is you asked him earlier which two journals he used or databases, and he told you Tox Line or Med Line and then he shortened it to Med Line?
A. I mean, these were two examples that I routinely do.
Q. (By Mr. Stolper) Is that what you did in this case? Is that what you asked to be done in this case?
A. They know that that's a minimum to go to is Med Line and Tox Line.

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Q. So --
A. There may have been others, I just don't remember.
Q. Are you the one who determines which databases to search or do they? And they I mean the contract librarian.
A. If, say, for example, I tell the contract librarian, I want everything that's available on these particular terms, I'll give them open running field, and I want to see as much information, so --
Q. Is that what you said in this -- in this case or more refined than that?
A. I just don't remember, like I said, what the exact bullion argument was.
Q. On page 2 of your report, the first paragraph under opinions, you state "The primary" -- I'm referring to the first paragraph under opinions -- "The primary focus of my review was the animal toxicology literature, but also included other literature and references as necessary."
The question is: Was the primary focus of the search for literature limited to animal toxicology literature?
A. No, no.

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Q. At what point in time did you focus on animal toxicology literature?
A. The focus -- in my review, animal toxicology literature dealt more with the issues of toxicology than any other areas did, and so this is where I focused my efforts. I used all the other -- as much available information as possible, but as a toxicologist, I want to focus on toxicology studies. This is my area of expertise.
Q. So you obtained -- in response to your search, you obtained studies that were outside the area of your expertise?

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A. Yes.
Q. Okay. Just try to have you walk me through the steps of your literature review.
So you gave search terms. You got literature back. You said you had a large volume of literature, but under 1,000 articles. What did you do next?
Is that when you segregated it into articles?
A. Let's go back to my answer here for a second. I don't want there to be any misunderstanding that the animal toxicology is my only area where as a toxicologist I would rely, and

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as a toxicologist, that's my area of expertise.
I may rely upon epidemiological literature. I may rely on chemistry literature, other sources of literature, so I don't want anyone to think that my only area of expertise is a very narrow area of toxicology.
As a practicing toxicologist, it encompasses many different areas, so as you characterize it as my only area of expertise, my area of expertise is the practice of toxicology, which may include other disciplines, collecting information from other disciplines. I'm sorry if that was confusing.
Q. Well, let me just -- that triggers a question or two.
Are you suggesting that your reliance on epidemiology qualifies you as an expert at epidemiology?
MR. DUNCAN: Objection. Mischaracterizes the testimony.
Q. (By Mr. Stolper) It's a question, you can answer it.
A. That's a mischaracterization. As a practicing toxicologist, I do use epidemiology as a tool. I'm not an epidemiologist, but I do use it as

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a tool. It's very useful in looking at information on the results in humans of chemical exposure. Chemistry is another area. What is the chemical part? What are the chemical properties of the chemical at issue? And this is a very general process. It's not limited just to this case.
The general practice of toxicology, which is what I am, takes into account all these different areas. And from that, that's what you use to base your scientific opinion.
Q. Okay. Going back to the question I asked, which is, once you've searched for the literature, received the literature, is the next step segregating it into the four categories that you have identified?
A. The next step is to -- certainly to at least read -- begin reading it and break it down into these categories that you're talking about, but it also -- I do -- yes, the answer to your question is yes.
Q. Okay. Once you break them down into categories -- in order to break them down into categories, you need to read the literature?

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A. Yes.
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Q. Do you read it from front to back or just the abstract?
A. I don't read just the abstract. It depends on the papers. Some may just be abstracts, so the answer to your question is no. It depends on the types of papers.
Q. Did you read every piece of paper that was given to you?
A. I studied the literature, yes.
Q. You say study the literature, that sounds -- to me it sounds more broad then. Did you actually look at every piece of paper that was given to you by HSRI?
A. Yes.
Q. Okay. So if you were given a 100-page report, for example, you would have read 100 pages?
A. I would have read the 100 pages of the report. I might not have gone through every page of, say, the bibliography on the records list.
Q. So once you've read them and categorize them, what did you do next?
A. Then I began to develop my opinion as to what -- what the science is telling me, and from there I may develop even smaller piles into this is
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useful; this has problems; this doesn't have problems.
So I would narrow it down into areas that I feel address the issue and are based in sound science or in some situations just the opposite. They may be confusing; they may be inconsistent or inconclusive or they gave methodological problems, so I may -- I may break them into those categories.
Q. Okay. That makes sense. I -- you're using the subjunctive tense which just throws me off a little bit. You're saying you may do this; you may do that; you might do this.
I'd really like to focus the series of questions now in terms of your process as to what you actually did in conducting the literature review regarding synergy, okay?
A. Okay.
Q. So I know we've talked about the searching. We've talked about getting the literature. We've talked about making an initial cut, so to speak, into categories.
Did you, then, in fact, break them down into smaller categories?
A. Yes.
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Q. Do you recall which categories?
A. Human and animal.
Q. But those were -- I think we had those as categories before among your four.
A. Okay. Now, in this case, you asked for the small -- the smaller one, so it would be like human epidemiology.
Q. Okay.

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A. There is no correlate to animal epidemiology. It would be animal studies. Then the human epidemiology may be subdivided into endpoints, same with animal.
Q. Okay.
A. Animal studies can, then, be broken into other categories, cellular biology, whole animal, perhaps even by different species.
Q. Now, is this what you did, or is this what you're -- again, you're saying you could or can't.
A. Right. I certainly -- I lumped all of the human epidemiological studies together as one group. I also looked at not just the epidemiological studies, but other reviews of those epidemiological studies.

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In other words, there are authors that actually review the epidemiological studies in larger papers. They may -- they may make comments on what's the overall science associated with not just one paper, but many papers?
Q. Do you have an example of that?
A. Actually two excellent ones are Sterling and Steedman.
Q. Do you know Sterling's first name?
A. No.
Q. Theodore ring a bell?
A. It could be.
MR. DUNCAN: Excuse me. If you're going to ask him about papers, can he look at his --
MR. STOLPER: Sure, feel free to put them in front of you. You also have Exhibit No. 1 in front of you, right, with your list of literature?
THE WITNESS: Is this one, right.
Q. (By Mr. Stolper) As a general matter, I'm still not done being walked through the process of what you did.
A. Okay.
Q. But I -- you mentioned something

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specific, and I wanted to get an example.
A. Okay. Theodore, right, correct.
Q. Were you just looking at the article itself?
A. Yes, Theodore's.
Q. Can you for the purposes of the record read the title?
A. "Model For Joint Influence of Occupational Exposure for Carcinogenic Dust and to Cigarette Smoke and Occupational Lung Cancer."
Q. Is that an epidemiological study or review of other epidemiological studies?
A. It does review contacts or parts of epidemiological studies.
Q. Okay. Can I take a quick look at that?
A. Surely.
Q. You're familiar with Dr. Sterling's conclusion in that article?
A. I'm sorry?

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Q. You're familiar with Dr. Sterling's conclusions?
A. I did read the paper. I want to look and see, he talks about discussions, and it's more of a point paper than having specific conclusions.
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Q. That's not a med analysis of --
A. No, it's not.
Q. Okay. Because I think you had previously -- example I was asking for was an example of what you were testifying about. You said there were certain studies done that took an overview of various epidemiological studies?
A. Okay, studies --
Q. I asked you for an example and you gave me that one. That's not it; right?
A. Studies and/or papers that do this. In this situation, he's looking at the epidemiology studies themselves, and he's making some very interesting points about where there are inconsistencies, where there are problems, especially in the areas of smoking and asbestos. He -- he shows that it depends on how you look at the information, whether you come away with the same result. One of the really interesting parts about this is when he looks at relative risk. When I looked at the relative risk in many of these papers, I was just -- it -- it was just -- the epidemiology became unconvincing.
Q. Isn't it true in that paper Dr. Sterling
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is suggesting that there are benefits to smoking?
A. If he says that, I don't agree with that.
Q. Okay. Are you familiar with Dr. Sterling's connection to the tobacco industry?
A. No.
Q. Would that be something of interest to you in reviewing literature and making conclusions based on the content of that literature?
A. The conclusions that I would make would be whether I see the pattern that he sees. Is he pointing out something that I didn't see when I was looking at the papers? And the answer here is yes.
Q. And what was the point that he -- I'm sorry. I just wanted to finish the thought.
A. Okay.
Q. What was the point that he was making that you hadn't seen when you reviewed the literature?
A. That the relative risks between smoking and nonsmokers that were asbestos exposed, the relative risk between the groups were comparable.
Q. Is that your opinion?
A. My opinion is that the smoking epidemiology is inconsistent. This is one of the
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areas that shows the inconsistency. It's not the only one.
MR. STOLPER: We may want to stop right here so we can change the tape.

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THE VIDEOGRAPHER: This concludes tape No. 2. The time is 2:57 p.m.

(Off-the-record discussion.)

THE VIDEOGRAPHER: Back on the record time now is 2:59 p.m.

Q. (By Mr. Stolper) Doctor, I realize that the substance of your opinion, you do give an opinion about the epidemiology studies. And before we get to that opinion -- and I promise we will get to that opinion today -- you -- maybe we could just bring this to a close in terms of your list.

In referring to the list of literature that's in your report, Exhibit C, where we left off you were making smaller and smaller piles of the articles.

A. Uh-huh.

Q. You were giving me some different examples that you were recalling?

A. Uh-huh.

Q. If you could just describe for me how you end up from subcategories and categories of these

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documents to the list that you have before you as Exhibit C?

A. Well, because something is in a subcategory doesn't mean that something higher up won't be included in the list. In other words, the list doesn't include just what's in the final, the smallest category --

MR. STOLPER: Is that a good noise?

MR. DUNCAN: Can we go off the record?

THE VIDEOGRAPHER: Off the record, time now is 3:01 p.m.

(Off-the-record discussion.)

THE VIDEOGRAPHER: Back on the record. Time now is 3:09 p.m.

Q. (By Mr. Stolper) Doctor, while we were off the record, we spoke and gracious enough to answer some questions off the record which could simplify my exam.

I was essentially asking you what this list which is attached as Exhibit C to your expert report represents. Would you agree, then, that this list, Exhibit C, represents all of the articles that you considered to be relevant to the question you were asked to address in this case?

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A. I would say that that represents the literature list that I used to come to my opinion, yes.

Q. Okay. And this list represents a culling of the overall universe of literature that you were provided with by HSRI; correct?

A. Yes.

Q. I know it's very difficult to ballpark, but somewhere it represents roughly half or less than half of the documents -- of the literature that you were given?

A. Yes. That I got in my literature search, yes.

Q. This Exhibit C contains literature that both conflict and are consistent with the opinions

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you're offering in this case?
A. Yes.
Q. Okay. We've used the term a few times today "synergy". Can you define -- what does synergy mean to you?
A. As a toxicologist, it is -- there are two definitions. One is that two chemicals cause the same effect and that the -- the some -- the result of exposure to two chemicals at some known dose
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cause an increase in the effect. The second is one chemical causes the effect, the second doesn't, and you add them together, and you see an enhancement of the toxicity.
Those are the two definitions of synergy.
Q. The two examples you gave are consistent in that the sum -- the cumulative effects of the risks of agents in both instances is greater than the risks associated with the agents independently; is that right?
A. No, not the risk, the effect.
Q. Why are you drawing a distinction between risk and effect?
A. Yes?
Q. You are drawing a distinction?
A. Yes.
Q. How come?
A. Because they're not the same thing.
Q. Are you saying synergy -- the concept of synergy only applies to results?
MR. DUNCAN: Objection.
A. I don't understand.
Q. (By Mr. Stolper) Are you saying that the term "synergy" does not apply to increased risks?
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A. As a toxicologist, you've asked me a question that it's very difficult to answer. Could we break it down a little bit?
Q. Okay.
MR. STOLPER: Why don't we have his answer read back.
(Whereupon, the requested portion of the record was read by the reporter.)
Q. (By Mr. Stolper) Okay. Sticking with the first example. You have two agents that cause the same effect. Would that be -- would tobacco and asbestos both can cause lung cancer be an example that fits within the first --
A. Some kinds of lung cancer, yes. You need to qualify what kind of lung cancer you're talking about.
Q. Are you drawing a distinction between adeno and squamous and small cell and different types of lung cancer?
A. Yes.
Q. But lung cancer in general?
A. And meso as well.
Q. Okay. But I'm just trying to fit examples to the two definitions or the two
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example -- you gave two instances. I'm just trying to put chemicals to that.

A. Okay.

Q. So would tobacco and asbestos fit within the first example you gave, where you have two agents that cause the same effect. In this case, I'm saying lung cancer generally?

A. And the missing part of my answer though is at a known dose.

Q. Okay. And at a known dose, and then you say the result is an increase in effect, I believe is what you said?

A. Yes.

Q. An increase from what? I'm confused by your statement. The result is an increase in the effect.

A. Whatever the toxic endpoint that you're looking at.

Q. Well, the endpoint in this case -- in this example that I've given you was lung cancer.

A. Okay.

Q. How can you have an increase in the effect?

A. All right. Although I'm not a

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pathologist, one of the things that I'm asking is, are you talking about a specific type of lung cancer? I mean, are you talking about the same kind of lung cancer? There's a lot of things I need to know to answer your question.

The term "lung cancer" is just too general.

Q. Too general for establishing whether or not asbestos and tobacco fit within this mold?

A. Yes.

Q. Well, you pick the lung cancer.

A. I'm --

Q. I mean these are your examples. Give me two -- then you tell me two examples that fit within the first paradigm you've established here.

A. Two examples of chemicals that do?

Q. Yeah, you gave two -- you set up two things here. You said one is you've got two agents that have an effect, and there could be an increase. That's one example of synergy. The second is one agent does have an effect, the second one doesn't, but you put them together and you have an increase as well.

So there's two different scenarios where in your opinion you see synergy. I'm just trying to find an

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example for the first of the two scenarios.

A. Where two chemicals cause the same kind of damage, is this what you're talking about? The same toxic effect.

Q. I'm only going with your scenario. You used the term "same effect."

A. Right, because as a toxicologist, I deal in the concept of the dose response. In this case, the effect and the response are the same, so it would -- as a toxicologist, we deal in the dose response, okay?

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Q. Okay.
A. Now, in that situation, two chemicals that can be additive that cause the same toxic endpoint -- let's say it's lethality. You need to know the dose of both chemicals in order to say this is a synergistic relationship.
Now, an example of this at high ends is cyanide and carbon monoxide. At very high concentrations, the lethality of the two is synergistic. At low -- lower concentrations, it's not, but the endpoint is the same. The dose response is the critical and important part.
Q. Okay. I understand that that's an

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element now, but when you say it has a synergistic effect, what do you mean by that?
A. That the effect is more than -- than -- the toxicity in this case, lethality, is more than you would predict from cyanide alone or carbon monoxide alone or the known toxicities at these given doses put together. It's even greater than that.
Q. That's what you consider to be a synergistic effect?
A. That's example No. 1. The important and relevant part is at what dose?
Q. Right. But the synergistic effect component of that doesn't change in either one of your scenarios?
A. I've only given one scenario thus far.
Q. Right. But the other scenario where one agent does have an effect and the other one doesn't have an effect.
A. Right. Again, at some dose.
Q. At some dose?
A. And you need to know what that dose is. When those two are put together, you get an enhanced toxic effect, and if you need an example of that...

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Q. Enhanced from that -- well, if you have two agents, one has an effect, one doesn't, you add them together, what -- you're defining synergy is greater than adding the effects of the two of them together; correct?
A. Yes.
Q. The only difference in your scenarios is one in the first scenario you've got two agents that have an effect, and the second you only have one agent that has an effect independently?
A. And the other thing that's important is that you have to know what the dose is.
Q. I realize that's a constant in the paradigm for both these scenarios?
A. As a toxicologist, we're all going to be constant in the dose response curve.
Q. Is that something that's subject to debate in the literature?
A. Of the dose response curve, no.
Q. Okay. If you had to cite to any one article that sets forth the definition of synergy that you just set forth, which one would you refer

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to?
A. Now, the definition of synergy I gave you
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as a toxicologist is a practical toxicologist's definition of synergy. I mean, this is -- this is to the toxicologist what is commonly recognized as synergy. These two examples. So if you were going to go to a toxicologist textbook, this is what you would see.
Q. Okay. Is that basic toxicological principle as you characterized it --
A. Right.
Q. -- captured and set forth in any one of these articles?
A. I'm sorry. Are you asking me if any of these articles are in basic toxicology?
Q. Any of these articles say what you just said. You said it's a basic principle. I'm asking give me an example. I can go look it up and find written what you just said is the basic toxicological principle.
A. There are numerous toxicology textbooks in this.
Q. You don't cite to any textbooks?
A. As a toxicologist, I don't have any need to cite basic principles of my practice.
Q. And I understand that. But I'm asking
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you if any one of these articles -- you keep taking me back to textbooks. Believe me, I had enough textbooks when I was in school.
A. I don't know whether any of these specifically address the two mechanisms as I've described them. I just can't answer that.
Q. Now, on page 2 of your report, the fourth paragraph down, there's a sentence that begins, "My overall opinion from the literature both human and animal studies is that a synergistic relationship between asbestos and cigarette smoking is not demonstrated."
Do you see where it says that?
A. Yes.
Q. Is that your opinion in this case?
A. Yes, it is.
Q. Can you point to a specific study or studies in Exhibit C of animal studies that do not demonstrate a synergistic relationship?
A. Okay. The synergistic relationship in a number of studies is demonstrated -- if I may --
Q. Sure.
A. First of all, Wehner does not show it in animal studies. There's a large group of papers by
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the Churg group which state that they have found evidence of what they describe as synergism and are at the very best -- the best I can say about these is they -- they do not show synergy and especially they do not show synergy in the endpoint which the human study shows synergy, such as lung cancer. They do not.

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Q. Okay. Hang on a second, because I think you just collapsed sort of two different categories for me. You're saying the Wehner studies, am I saying that name right?
A. I imagine so. I don't know how it's pronounced.
Q. W--
A. W-e-h-n-e-r, A.P. Wehner, yes.
Q. You're saying that they conclusively demonstrate that there is no synergy?
A. Here's an exact quote from him. "Neither a carcinogenic effect of asbestos nor co-carcinogenic effect of cigarette smoke was observed," means he did not see it.
Q. And the Churg articles, to finish up with your examples that you gave, Churg you say does say in the body of the -- Churg does conclude that there

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is synergy. You just are looking at his literature and disagree with his conclusion?
A. I think he seriously overstates his conclusions.
Q. Churg's a pathologist?
A. It says M.D. from Department of Pathology. I'm not sure what his actual discipline is.
Q. Okay.
A. But in terms of the endpoint, I see no -- I see no synergy.
Q. Okay. So there are two categories here. There are those that you believe affirmatively conclude there's no synergy and there are others that say there is synergy. You just disagree with it, with their conclusions?
A. No. I think that's not really correct. Wehner paper says there's no synergy. The other papers, especially in the other papers, are not even designed to evaluate synergy at the relevant endpoint that we're talking about here. So that's -- there's simply no way that they can do it.
Q. Are there other examples off of Exhibit C where they show -- where there are animal studies

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that do not demonstrate a synergistic relationship in your opinion?
A. This is what I find to be the -- sufficient for my opinion, which is it's unconvincing.
Q. Meaning when you say this, you're talking about the Wehner article?
A. Wehner and the Churg group, which is the vast majority of animal studies that I've been able to identify.
Q. Okay. You didn't need to look beyond those two -- those two groups of studies? Are there more than one study for each?
A. Wehner is -- reports on a large study, a large lifetime study and the Churg group is a number of studies.
Q. Okay. From your perspective, reviewing those studies is sufficient for you to form an

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opinion?
A. That it's not consistent, yes.
Q. Do you rely on any other studies to support your opinion that animal studies do not demonstrate synergy?
MR. DUNCAN: Objection. Counsel, you
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mean any other animal studies?
MR. STOLPER: What did I say?
MR. DUNCAN: You said studies.
Q. (By Mr. Stolper) Animal studies?
A. This is consistent to convince me that there's no consistent evidence of synergy between smoking and asbestos from the animal studies.
Q. In absolute terms or at any given point in time?
MR. DUNCAN: Objection.
A. I don't know by -- I can't predict what's going to happen in the future.
Q. So is it a fair characterization of your opinion that you're saying as of now there are no animal studies that demonstrate a synergistic relationship between asbestos and tobacco?
MR. DUNCAN: Objection. I think he already discussed with you what he thought Churg's results were. I don't think he said that there are no studies that don't demonstrate it. I think he went through that at length. I think it's a mischaracterization, but go ahead, Doctor, if you can address it.
A. What I was going to say that in effect
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that's not what I said. What I'm saying is the information here is sufficient for me to make the determination that -- that synergy is not seen in the animal studies. And I have seen no evidence that would convince me that there is synergy, especially in the areas of animal studies for cancer.
Q. Other than the Churg group studies that you referred, are there studies listed on Exhibit C that -- I'm talking about animal studies on Exhibit C -- that claim to demonstrate a synergistic relationship?
A. I'd have to go through them line by line and synergistic relationship in what endpoint? What toxic endpoint?
Q. I mean, pick your endpoint relevant to this case, lung cancer, asbestosis, stick with lung cancer. Are there -- other than the Churg group studies, are there any studies on your list with which you disagree with the conclusions reached regarding synergy?
A. That's a very big question. I'm not sure I could answer that question.
Q. I mean, what do you mean it's a big
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question?
A. There are a lot of papers in here. We'd have to go through this paper by paper to refresh

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myself and whether or not they say there's synergy, review the environmental design and say, yes, I agree or disagree.

Q. Okay. We'll go through some specific studies, but I think you said -- I don't want to mischaracterize what you said -- but this Exhibit C contains articles that you agree with and disagree with with regard to synergy; correct?

A. Yes, to the issue, right.

Q. There are animal studies contained on your list that claim in those studies to demonstrate a synergistic relationship between asbestos and cigarette smoke?

A. No. The two don't follow at all. First of all, we talked about what's the endpoint, so in your characterization to find a synergy in an animal model between -- between smoking, asbestos, and lung cancer. So what I'm saying is you need to pick your endpoints for me to try to answer your questions. I'm not trying to be evasive. You just need -- I need better questions, more specific questions.

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Q. I'll ask the question and then I'll do it with lung cancer.

There are animal studies on Exhibit C that claim to demonstrate a synergistic relationship between asbestos and cigarette smoke that can be extrapolated to humans, the endpoint being lung cancer.

A. I don't know of any. I don't remember seeing any.

Q. So there are no articles in your opinion on Exhibit C that suggest that their findings are supportive of the epidemiological studies that have demonstrated a synergistic relationship?

A. You've mixed apples and oranges here. I mean, what people suggest and what their data shows and what it shows convincingly are two completely different things.

MR. DUNCAN: So I can perhaps add something so we don't have a completely muddled record here, if we're talking about specific articles, perhaps we can have Dr. Dulaney look at it. You can ask him questions about it and whether or not it supports it.

If you're specifically talking about the Churg

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article, then I would want Dr. Dulaney to open up the notebook and look at Churg and see what Churg says about it, instead of speculating on what the article said or didn't say.

MR. STOLPER: We'll get to specifics.

Q. (By Mr. Stolper) I want to understand what Exhibit C consists of because you didn't state that it has things you'd agree with and disagree with and not everything on Exhibit C is consistent with your opinion; correct?

A. Correct.

Q. Okay. I'm just trying to understand how -- I'm trying to understand which studies on here are inconsistent and how they are inconsistent

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with your opinion.
A. Then we're just -- we would have to go through these study by study. We'll also probably want to break them down into animal and human.
Q. Just right now I'm sticking with animal.
A. Okay.
Q. We haven't talked epidemiology yet on this list. The series of questions are about the animal studies.
A. Okay.
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Q. So you've held out Wehner and Churg as examples, and I'm just -- off the top of your head, are there any other articles -- any other articles that you find that are supportive of your opinion with regard to animal studies?
A. I'm sorry.
MR. DUNCAN: Counsel, can we have a break for a minute?
MR. STOLPER: Sure.
MR. DUNCAN: I need a break. Let's just take five minutes. All right?
THE VIDEOGRAPHER: Off the record, time now is 3:36 p.m.
(Off-the-record discussion.)
(Brief recess taken.)
THE VIDEOGRAPHER: Back on the record, time now is 3:44 p.m.
Q. (By Mr. Stolper) Doctor, we've been talking about animal studies. What in your opinion is the role of animal studies?
A. The help elucidate mechanism. They help develop dose response, many times they can identify the toxic endpoint that you want to look at, especially if you don't have human -- human data.
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Q. You say identify endpoint. You mean identify a potential disease that may be caused from the agent?
A. Yes.
Q. Okay. What, in your opinion, is the role of animal studies in investigating whether or not there's a synergistic relationship between asbestos and tobacco?
A. One of the real problems is dose response, and we don't have any good dose response on asbestos, so you want to be able to control dose in animal studies to see if there is that synergistic relationship.
Q. At more than one dose?
A. It can occur, yeah, more than one dose, correct.
Q. Do you need animal studies to show whether or not synergy occurs at any dose?
A. I don't understand. I'm sorry. You mean in animals?
Q. In animals.
A. Okay. It's certainly helpful to elucidate whether a synergy is related to a dose. In other words, is it a true interaction, or is it,
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for example, a situation where you so overwhelm one protective or defensive mechanism that, then, the response that you see is an increase in a toxic effect? So, yes, it can be very helpful in that respect.

Q. In your opinion, do you need animal studies to demonstrate -- in light -- let me back up.

In light of the epidemiological studies that exist with regard to synergy -- and for purposes of today's deposition, whenever I refer to synergy, it's the synergistic relationship between tobacco and asbestos. For definitional purposes do you agree with --

A. Fine.

MR. DUNCAN: I'm sorry, Counsel, in the production of lung cancer?

Q. (By Mr. Stolper) Yes, in the production of lung cancer. Let's keep it simple so we're not debating over endpoints.

A. Okay.

Q. In light of the epidemiological studies regarding synergy, is it your opinion that you need to -- a positive finding of synergy in an animal

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study in order to conclude that there is a synergistic relationship on the human level?

A. As a toxicologist, I would find that to be conclusive that it was, so in answer to your question, as a toxicologist when I look at the information, epidemiology alone is not sufficient.

Q. Is that a general proposition or is that specific to this -- to this synergy question?

A. As you said, we were limiting to the synergy issue.

Q. Is that true generally outside the synergy concept?

A. Outside of synergy, no.

Q. Epidemiology can be proof-positive of causation in your opinion?

A. Yes.

Q. But it's your opinion in this case that epidemiology is not proof-positive of synergy?

A. Between these two agents and lung cancer, yes.

Q. We're going -- for synergy it's going to pick up the two agents and lung cancer?

A. All right, yes.

Q. Does asbestos cause lung cancer?

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A. Yes.

Q. Does smoking cause lung cancer?

A. Yes, some kinds, some kinds for both of them, yes.

Q. Are there certain types of lung cancer that are not caused by either asbestos or smoking?

A. Well, I'm not an expert on the types of lung cancers, all the different types as a pathologist, but I know that the literature shows that smoking is related to adenocarcinoma and

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squamous cell and that asbestos is also related to adenocarcinoma and squamous cell.

Q. Does asbestos exposure -- well, let me give you a hypothetical. I'm exposed to asbestos and I smoke. Am I a greater risk at getting lung cancer than you who doesn't smoke and have not been exposed to asbestos?

A. You have two independent risk factors for that. Each one of those increases your chance of developing cancer, so, yes, because you're exposed to two agents that have that -- increase your risk for lung cancer.

Q. Okay. Is it your opinion that that increased risk is not more than additive?

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A. It's my opinion that the studies that have been conducted thus far can't tell you that answer. They're inconclusive.

Q. My question was about risk as opposed to effect. I think when you defined synergy you were talking about effect. My question now is about risk.

Is your opinion the same for risk? I'm exposed to both, I smoke and I'm exposed to asbestos. Am I not at a greater than additive risk of getting lung cancer than you who is only exposed to, say, asbestos?

MR. DUNCAN: Counsel, that question was multiply compound, and it's different from the first question you asked him, but you're asking as if you were repeating it. Could you ask it again as one question?

MR. STOLPER: I attempted to repeat it. Maybe I could have it read back and if you understand it, go ahead and answer it, if you don't, tell me why you don't.

(Whereupon, the requested portion of the record was read by the reporter.)

Q. (By Mr. Stolper) Okay. I'll do it again.

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Assume for hypothetical purposes that Johns Manville is still manufacturing asbestos in the year 2000, and you're hired by Johns Manville to do a risk assessment of their facility at which they manufacture asbestos.

You conduct your risk assessment, and you conclude that at least 80 percent of the workers that are exposed to asbestos also smoke. What is your risk assessment going to say with regard to the risk of Johns Manville workers getting lung cancer?

MR. DUNCAN: Objection. Incomplete hypothetical. Vague and overbroad. Doctor, to the extent that you can attempt to answer it.

A. There are a number of parts in that that -- that I would have to address. First of all, would be how much asbestos were these individuals exposed to? How much did they smoke? How long were they exposed? How long did they smoke?

And I'd need to control for all of these individual variables before I could even attempt to determine if there was -- or what risks were. Now,

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in terms of as a toxicologist, one of my opinions would be that I would want to know, again, from the dose where they stood on the dose response curve.

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So my risk assessment would clearly address dose response curve. The second would be both for asbestos and for smoking. Then at the end what would my conclusions be would be totally dependent upon where these individuals -- and it would be at the individual level. I'd also have to take into account confounders. There are many things that I would have to take into account before I could adequately address the risks of these individuals.

Q. Okay. Let's assume the same hypothetical, dose response curve, top of the dose response curve, highest exposure to asbestos, highest -- largest amount of pack years, highest amount of pack years.

MR. DUNCAN: Objection. Incomplete hypothetical, erroneous hypothetical, but, Doctor, to the extent you can answer it.

A. There is a critically missing piece of information even in all the epidemiology studies and that is, don't know what level of asbestos these individuals were working from.

So there's no dose response curve. We don't know what it is, so I do not know what it means when you say at the top of the dose response curve. We

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don't know what their dose is.

Q. That's your opinion with regard to all the studies?

A. All of the studies suffer from the fatal flaw is they can't tell us what -- they can't reliably measure what the asbestos levels are, so we don't know where on the dose response curve they are. If you don't know where they are on the dose response curve, how can you know if there's going to be any increase in effect? You just don't know.

It could be completely due to asbestos simply because they're so high on the dose response curve. We just don't know. That is a serious fundamental toxicological flaw of all the epidemiology. It's one of the reasons why it's so unconvincing.

Q. Would you say that's a flaw in your opinion of Dr. Selikoff's work?

A. There's no characterization of asbestos activity -- or of asbestos dose in Selikoff's work.

Q. He's working with a particular population?

A. Uh-huh.

Q. You're familiar with Dr. Selikoff's work?

A. Yes.

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Q. You cite to it in Exhibit C; correct?

A. Yes.

Q. I'm specifically referring to his article in '68 and his follow-up with Hammond in '79, with the insulators. You're familiar with both of those?

A. Yes.

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Q. That's a discrete population that Dr. Selikoff was working with?
A. Yes.
Q. It's your opinion that based on the information contained in Dr. Selikoff's '68 and '79 reports, that you have insufficient dose response information in order to conclude one way or the other whether or not there's a synergistic relationship between smoking and asbestos?
MR. DUNCAN: Objection. Mischaracterizing the testimony.
A. I'm sorry. That's not what I said. And when you say Selikoff '79, do you mean Hammond and Selikoff '79?
Q. Yeah.
A. Okay. In this situation you need to know. If you're going to look at a synergistic relationship, you need to know where on the dose

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response curve you are. It's just that simple.
Q. You're saying that Dr. Selikoff in doing the studies didn't know where he was on the dose response curve in formulating his opinions -- his conclusions in his reports?
A. I've seen no information in the epidemiological literature that describes the dose of asbestos that these workers were exposed to.
Q. You haven't seen any characterization of exposure?
A. There has been some attempt to do so, but cannot tell us what dose these workers were exposed to. There may be estimates. There may be guesses, but no one can tell us where they are on the dose response curve.
Q. When you say that's a fatal flaw, you're saying without that, one could never conclude based on that data that there's a synergistic relationship between smoking and asbestos?
A. What I'm saying is it's unconvincing because as a toxicologist, you need to know where on the dose response curve you are.
Q. I realize you're saying why it's unconvincing, but I'm saying if you had -- without

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that information, but -- without that information, but with the other information that -- that Dr. Selikoff relies upon in those two studies, you're saying that is insufficient to conclude one way or the other whether there's a synergistic relationship?
MR. DUNCAN: Objection. Asked and answered.
A. In effect -- if you don't know what the dose are -- is in one of the two chemicals that you're trying to say has a synergistic effect, then any conclusions that you have -- that you make about that interaction is going to be -- it's going to be weakened because it doesn't have information on the dose.
Q. I understand you've used the terms "weaken" now or "unconvincing"?

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A. Right.
Q. But I'm just trying to get absolute terms. Is it impossible to make conclusions about synergy without the information you claim is missing?
A. Well, no. They make the conclusions that there's a synergistic relationship or some of them
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do.
Q. Well, my question was in your opinion. I realize that there are others who are -- that are going -- that disagreed with what you're saying for many years. I'm --
A. Uh-huh.
MR. DUNCAN: Objection, Counsel.
Q. (By Mr. Stolper) We're trying to figure out --
MR. STOLPER: Can I get a question out there? You can object when I'm done with my question as being argumentative, if you'd like.
MR. DUNCAN: It's argumentative.
MR. STOLPER: Okay. He thinks it's argumentative.
Q. (By Mr. Stolper) But nevertheless, you agree with me that Dr. Selikoff reaches a different conclusion than the opinion you're giving in this case; correct?
A. Dr. Selikoff comes to a different conclusion, yes.
Q. Okay. In your opinion -- is it your opinion that you cannot conclude that there's a synergistic relationship absent the information --
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the dose response information that you seek?
A. Are you now limiting just to Selikoff's work?
Q. Yes.
A. Okay. In Selikoff's work, there are some serious flaws in it. These do include the lack of dose response, and without that, it's difficult to come to those conclusions.
MR. STOLPER: Let's mark this as Exhibit No. 2.
(Whereupon, Dulaney Deposition Exhibit No. 2 was marked for identification by the reporter.)
Q. (By Mr. Stolper) We've put before you what's been marked as Exhibit No. 2. It's a document entitled "A Review of Evidence on the Joint Relationship of Asbestos Exposure and Smoking to Risk of Lung Cancer," by PN Lee dated February of 2000.
Have you ever seen that document before?
A. No.
Q. Do you know who Peter Lee is?
A. No.
Q. If I can draw your attention to the Bates
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stamp page RC53, do you see the table that's on that page?

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A. Uh-huh.
Q. Do you recognize the table? Perhaps if you turn to the page preceding it or the two pages preceding it, three pages preceding it, and I'll represent to you that this document is some type of analysis of the various studies relating to the synergy question.
The chart I brought your attention on page RC53 relates to the Hammond and Selikoff '79 study.
A. Okay.
Q. The question I asked, do you recognize this from having reviewed the Hammond/Selikoff study?
A. Let me --
Q. Perhaps it's easier for you to pull out the Hammond/Selikoff study. I don't have a copy of it handy.
A. I have one here.
MR. DUNCAN: What study are we talking about?
MR. STOLPER: '79.
A. Okay, go ahead. Now, what table --

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Q. I think it's Table 8 in the Hammond/Selikoff study; am I correct?
A. This table has 1, 2, 3, 4, 5, 6 columns. This has 1, 2, 3, 4, 5 columns, this has 1, 2, 3, 4 rows. This has 2 rows. You're saying they're the same table?
Q. Maybe I have the numbers wrong. Can I take a quick look at your copy?
A. Sure.
Q. Essentially has the same data, just formatted slightly differently. Are you familiar with the table in the -- Table 8 in the Hammond/Selikoff study?
A. Yes.
Q. You have an understanding what the table represents?
A. Well, it's labeled "Age Standardized Lung Cancer Death Rates for Cigarette Smoking and/or Occupational Exposure to Dust Compared to No Smoking and No Occupational Exposure to Asbestos Dust," okay.
Q. Have you seen -- you've read this article that you have in your hands, the Hammond/Selikoff '79 study?

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A. Right. And this one that you alluded to at 53 is "Lung Cancer Rates by Asbestos Exposure and Smoking Exposure." These are the --
Q. The numbers are the same, the charts are the same, isn't it, aren't they?
A. I don't know what the purpose of this chart is. I haven't read the document, so I don't know what the purpose of the chart is.
Q. Putting that aside, why don't we just use the Hammond/Selikoff '79. We won't mark it, because I don't have an extra copy, but you're kind enough to bring your copy today, so I'll ask you some questions on that.

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A. Okay.
Q. Do you have an understanding of what that chart is showing?
A. Well, yes, as -- again, I'm not an epidemiologist.
Q. Right.
A. So the nuances associated with this, I may not be as familiar with this as an epidemiologist would be.
Q. Uh-huh. With that qualification, do you have an understanding of what the chart is showing?

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A. Yes, I believe so.
Q. What's your understanding of what's demonstrated on the chart?
A. Well, it shows the differences in mortality, differences in mortality ratios, and, it gives a qualitative example -- it gives qualitative yes/no as to exposure to asbestos, history of cigarette smoking, yes, no, and then between control and asbestos workers.
Q. Okay. Focusing on, say, just the death rate or the mortality rate that's listed there, do you see the numbers that are identified there?
A. The death rate, okay. There's -- all right.
Q. Is there a column there that's entitled "Death Rate"?
A. Uh-huh.
Q. Under "Death Rate," do you see it's a comparison between those who have smoked, those who never smoked, those who have been exposed to asbestos, and those who have never been exposed to asbestos?
A. Yes.
Q. Do you see that the -- would you agree

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that the numbers there -- and I -- the numbers are 11.3, 1. -- 122.6, 58.4, 601.6. Do you see those numbers in the "Death Rate" column?
A. Yes.
Q. Taking a look at that column, doesn't that demonstrate to you that the death rate among those exposed to both asbestos and cigarette smoke is significantly higher than the death rate for those exposed to neither agent?
A. These numbers are higher, yes.
Q. Can you quantify how much higher just by looking at those numbers?
A. Let's see. Do you want -- are you asking for absolute values, would be --
Q. Just absolute.
A. I didn't bring my calculator, but looks like to be about 540 difference between the asbestos workers and 111 between the controls.
Q. Now, I understand you're not an epidemiologist, but you would as a toxicologist and you have considered this document in determining -- in reaching conclusions about whether synergy exists; correct?
A. Yes.

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Q. And wouldn't your opinion be influenced by the increase in death rates -- the dramatic increase in death rates when someone is exposed to both agents?
A. Yes. When I first looked at this, I was struck by this -- by the difference in that, until I did some additional looking into this, yes.
Q. Okay. Can you tell me in your -- what analysis you did or conclusions you reached?
A. One of them is, again, cigarette smoking, yes or no. Well, how much? How much did they smoke? Smoking has a dose response just like any chemical. How much asbestos? Asbestos has a dose response.
This kind of information doesn't give you that. What is the dose response from here?
Q. Okay. As a toxicologist, you would prefer to have dose response and to know exactly how many cigarettes and how much asbestos exposure would equal your endpoint; correct?
MR. DUNCAN: Objection.
Q. (By Mr. Stolper) Do you understand the question?
A. Not really.
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Q. Okay.
MR. DUNCAN: I'm sorry, Counsel. When you say equal your endpoint, cause the disease, is that what you mean?
THE WITNESS: That's what I don't understand. You mix a lot of different ideas here. I'm not trying to be evasive here.
Q. (By Mr. Stolper) No, no, let me -- you're not disagreeing with the fact that there is an increased number of deaths among those who smoked and were exposed to asbestos in contrast to those who didn't smoke and weren't exposed to asbestos; correct?
A. No.
Q. No, you agree; no, you disagree?
MR. DUNCAN: You asked him a question, he said --
A. I thought you asked me, I'm not disagreeing.
Q. Okay.
A. I'm not disagreeing, correct.
Q. Okay, thank you. Confused myself on my double negative.
Your criticism -- and I'll use that word
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loosely, but your -- your criticism of this is that -- well, the lack of information with regard to dose response prohibits you from mapping out specific pack years and, you know, fiber per milligrams or milliliters or whatever the measurement for asbestos exposure is over a curve; correct?
A. We don't know where any of these individuals are on the dose response curve for

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either chemical, correct.
Q. I understand that.
A. Okay.
Q. But that criticism doesn't preclude you from coming to a conclusion that in absolute terms there is a synergistic relationship between those two agents?
A. Yes. That's a fundamental synergy in the context of toxicology, you need to know what the dose response curve looks like and where these individuals are on the dose response curve.
Q. Why does it matter whether you -- to know how many cigarettes one smoked or how much asbestos one was exposed to when studies of an entire population show an increased rate of death when you

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have the dual exposure?
A. Okay, you need to know where each individual is on the dose response curve first.
Q. Why?
A. Because without knowing the dose, you can't know the response. I'm -- and then if you don't know what the dose response curve is for both of them, how can you say that there's an interaction between the two? There's where the rub is.
If you want to use the toxicological concept of synergy, then you need to use sound toxicological -- then you need to use sound toxicological properties, including where on the dose response curve you are.
Q. That's true when you're dealing with individual risk; right?
A. I'm sorry.
Q. I'll give you a hypothetical. I need to know, if I'm a smoker and I want to go mine asbestos in an asbestos mine, and I come to you as a toxicologist and say, "What are my risks?" You would want to know on an individual basis, how many cigarettes are you smoking and how much asbestos are you being exposed to on your job?
A. Yes, of course.

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Q. If you're studying an entire population, 17, 18,000 workers in the insulator population as an example, in order to conclude what's happening among those 18,000 workers, you don't need to know how many cigarettes each individual asbestos worker is smoking and how much asbestos fiber each individual worker is exposed to in order to make conclusions for that population?
A. No. That's not right. The principles of toxicology apply whether it's 1 person or 17,000 people. I mean, because each of these individuals are counted one at a time, you want to know if you have a toxic endpoint. What caused this toxic endpoint?
So the principles of toxicology don't change whether it's 1 person or 17,000.
Q. Okay. Can you point me to a study that says Selikoff is wrong in both '68 and '79 because he lacks sufficient dose response information?
A. I don't know of a study that says because

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of the lack of dose response. I do know of a paper that says that the '69 or the '68 paper has a very low number, and so it's very difficult to make conclusions from it.

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Q. When you say low number, what does that mean?

A. Low number of people in the group that he studied, because it's a low number, it has less power to determine whether or not this is really true.

Q. Okay. So let's look beyond '68. Let's look at '79.

A. Let's look at Hammond '79.

Q. Now, you agree that that paper concludes that there's synergy; correct?

A. I know -- I also -- you asked me, have I identified a study --

Q. Yeah.

A. -- that says I have also identified a paper where they evaluate this very same paper which looks at the relative risks between smokers and nonsmokers that are asbestos exposed and shows that the relative risk are very comparable?

Q. What paper's that?

A. This would be Cyle Steenland (phonetic). It would be Steenland and I guess it's Thun, T-h-u-n.

Q. Can you read the title for purposes of

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the transcript?

A. "Interaction Between Tobacco Smoking and Occupational Exposure in the Causation of Lung Cancer."

Q. So that's one paper that reaches a different conclusion than Hammond/Selikoff '79?

A. This paper points out that the relative risks in Hammond's paper are the -- in his study group are the same between smoking and asbestos and nonsmoking and asbestos.

Q. That Steenland paper doesn't really -- doesn't refer to synergy, does it?

A. It's -- it discusses -- it actually -- it actually discusses the nature of interaction between the two.

Q. But it specifically says we're not dealing with synergy in this paper, doesn't it?

A. In this paper it talks about interaction between the two, whether you move away from the additive model or another model.

Q. Right. But you started by saying there's a sound toxicological definition of synergy?

A. Uh-huh.

Q. And this paper specifically says it's not

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about synergy?

A. What it talks about, whether it's the additive model or a model that would support synergy, it says -- in fact, the first sentence is very helpful here. "The nature of the interaction

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between smoking and occupational exposure is controversial, partly because of the lack of agreement on the definition of interaction, and in part because of the scarcity of adequate epidemiological data."

That's how the paper starts.

Q. Can I borrow that for a second?

A. Surely.

MR. STOLPER: I think I have my copy.

Q. (By Mr. Stolper) If I can draw your attention to page 111 of that study, the second full paragraph on the top left-hand corner. Do you see where it reads, "The term synergism will be avoided in this review. This term has also been used to describe interaction to biochemical or cellular level"?

A. Uh-huh.

Q. Wouldn't you agree, then, that this study is not about synergy?

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A. It doesn't use the word "synergy."

Q. This is about statistics this article, isn't it?

MR. DUNCAN: Objection.

A. Statistics?

Q. (By Mr. Stolper) This article is a statistical analysis, isn't it?

A. I suppose that's one way to characterize that.

Q. (By Mr. Stolper) Your opinion that the epidemiology doesn't support synergy hinges upon the Steenland article?

MR. DUNCAN: Objection. That does mischaracterize his testimony.

Q. (By Mr. Stolper) You can answer the question.

A. What I've always said that it is unconvincing that the information -- a number of the studies that we have looked at do not find this -- do not -- they do not replicate the results of Hammond or Selikoff '68. They do not find this large synergistic response that they report.

Q. Now, are you saying that you haven't -- there aren't studies that find that there's a

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greater than additive effect?

A. Some do.

Q. Do you have a sense if most do?

A. It's -- it's not a question of most. It's -- it's more of a question of is this consistent in the literature? And it's not consistent in the literature, so it's unconvincing. It's just not -- it is not consistent.

Q. Now, you've got Exhibit 2 in front of you. You didn't ask the defendants for any documents; is that right?

A. Did I ask the defendants for --

Q. I'm sorry. Did you ask the tobacco companies for any of their own research? I think you said no; right?

A. No, no.

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Q. If I could draw your attention to Exhibit No. 2. If you could just take a look at the Table of Contents, which is RC3 and RC4. Do you see that?
A. Yes.
Q. Do you see the authors identified in the right-hand side?
A. Uh-huh.
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Q. It refers to 23 studies; correct?
A. Uh-huh.
Q. Do you see the name "Berry" there?
A. Yes.
Q. Berry is somebody who is listed as an author of articles on your Exhibit C; correct?
A. Uh-huh.
Q. Do you recognize several of the names of the -- several of the authors as epidemiology -- of epidemiological -- let me start over.
Do you recognize the names as authors of epidemiological studies that are contained in Exhibit C?
A. Yes.
Q. Until conducting a literature review, would you have found it helpful to have had this study of 23 epidemiological studies?
MR. DUNCAN: Objection. Inadequate -- inadequate hypothetical, but go ahead, Doctor.
A. I certainly want to have all pieces of information, certainly.
Q. (By Mr. Stolper) This is a review of some of the epidemiological studies that you claim are unconvincing; correct?
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A. Yes.
Q. Okay. This was done in February 2000. If I could draw your attention to the executive summary, the second page?
A. Okay.
Q. Do you see the paragraph where -- the second full paragraph, "The evidence taken as a whole has a number of limitations." If I could have you read that paragraph.
MR. DUNCAN: Counsel, do you have a copy for me?
MR. STOLPER: I don't, but you can read off of mine.
MR. DUNCAN: I'm sorry. I do have a copy.
MR. STOLPER: You just wanted to see my highlights.
MR. DUNCAN: No.
Q. (By Mr. Stolper) Let us know when you've had a chance to read the page -- why don't you just read the page?
A. Okay (The witness complied.)
Q. You've read it?
A. Yes.
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MR. DUNCAN: I'm sorry. Counsel, do

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we have a cite for this to a journal article or a journal number for this?
MR. STOLPER: This article?
MR. DUNCAN: Yes.
MR. STOLPER: I believe according to the tobacco company employee who testified about this, it's not yet been published.
MR. DUNCAN: I see. Okay.
Q. (By Mr. Stolper) But if Dr. Dulaney, in the interest of giving you full context, if you turn very briefly to RC100, you'll see in the very -- under the acknowledgments section, the authors thanking Philip Morris for financial support.
MR. DUNCAN: Objection.
Q. (By Mr. Stolper) Now, back to the executive summary.
MR. DUNCAN: Was that a question, Counsel?
MR. STOLPER: I was giving him the benefit -- you had raised the issue of where this came from. I just wanted to let him know.
MR. DUNCAN: I just asked you if you had a cite to it.

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Q. (By Mr. Stolper) Back to the executive summary, you see in the second paragraph it addresses the limitations of some of the epidemiological studies, including unreliable assessment of asbestos exposure, unvalidated smoking data. Do you see that?
A. Uh-huh.
Q. Those are the limitations that you're talking about; correct?
A. Correct.
Q. Now, do you see the next paragraph which begins, "Despite these limitations, the data allow a number of main conclusions to be drawn." Do you see that?
A. Yes.
Q. And the third conclusion -- the conclusion next to the No. 3, you see where it says, "The joint relationship is well explained by the multiplicative model." Do you see where it says that?
A. Sure, uh-huh.
Q. Would you -- is it your opinion that -- well, let me ask you this: Do you disagree with the conclusion set forth in the executive summary of

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this document?
MR. DUNCAN: Objection. If you're asking for each one or all?
MR. STOLPER: I'm referring to the conclusion I just quoted to you in No. 3.
MR. DUNCAN: No. 3.
A. This is an executive summary of a document I haven't read. Are you asking me do I agree with the document that I haven't read, or do I not agree with this statement?
Q. (By Mr. Stolper) This statement pertains to articles that you've read and that are cited in

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Exhibit C, so I'm asking you whether or not you agree with the statement. I realize that you have not read this particular article.

A. I don't believe that -- that either the -- I just don't believe that it's convincing that the additive model doesn't describe the effect or that the multiplicative model does describe the effect.

Q. I missed the beginning of that. You said you don't agree?

A. With No. 3, I don't agree that is well explained by the multiplicative model.

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Q. That's based on what you've seen?

A. What that's based on is what I've seen and also the second paragraph that you asked me to read.

Q. Okay. Which addresses the limitations that you were raising prior to having seen this document; correct?

A. Correct.

Q. Okay. Now, based on what you've read in this executive summary and in the table of contents and what it purports to set forth, is this the type of document that you would have been interested in reviewing in conducting your analysis?

A. It would have been something that I would have liked to have had, yes.

Q. And it's possible that this document, having looked through it and looked through the analysis contained in this document of the various studies that you've read, your opinion could change?

MR. DUNCAN: Objection.

A. You're asking me to speculate on something that I just -- I don't know what this document says.

Q. (By Mr. Stolper) Would you agree that a

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statistician, a biostatistician -- are you familiar with the term -- with the expertise biostatistician?

A. Yes, I know what it is.

Q. Would you agree that a biostatistician would be in a better position than you as a toxicologist to review and analyze epidemiological studies?

MR. DUNCAN: Objection. Lack of foundation.

A. I'm sorry. In what context? As a toxicologist? No, I wouldn't agree.

Q. (By Mr. Stolper) Well, if you're drawing conclusions -- it's about -- my question was limited to the studies. You've testified previously that epidemiological studies by themselves can demonstrate causation; correct?

A. Yes.

Q. Okay. This is a review of 23 epidemiological studies regarding the synergy question by a biostatistician. My question to you is: Would you agree that the biostatistician is in a better position to analyze the epidemiological studies on synergy than you are as a toxicologist?

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24 MR. DUNCAN: Objection. But, Doctor,
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1 to the extent you can answer, go ahead.
2 A. I'm not sure. You're asking me about
3 someone that I don't know. I don't know his
4 credentials. What is he a biostatistician of? I
5 would say that an epidemiologist would be a good
6 person to consult for what this paper means and
7 whether this information can -- can be relied on an
8 epidemiological standpoint.
9 Q. Doctor, I'm going to move off of that
10 exhibit, because there was something in here I
11 wanted to find and, I couldn't find it quickly, so
12 in the interest of time, I'm going to move on.
13 You referenced an article by Wehner, A.P. Wehner
14 earlier today --
15 A. Yes.
16 Q. -- as a document you were relying on in
17 support of your opinion that animal studies do not
18 demonstrate synergy; correct?
19 A. Correct.
20 Q. Do you have that article?
21 A. Yes.
22 Q. Or can you get that in front of you?
23 A. Sure.
24 Q. Do you have it?
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1 A. Yes.
2 Q. What's the date?
3 A. 1975 is the publication date.
4 Q. Okay. The title is "Chronic Inhalation
5 of Asbestos and Cigarette Smoke by Hamsters"?
6 A. Uh-huh.
7 MR. STOLPER: Can we have that marked
8 as Exhibit No. 3
9 (Whereupon, Dulaney Deposition
10 Exhibit No. 3 was marked for
11 identification by the reporter.)
12 Q. (By Mr. Stolper) Perhaps in the first
13 instance if you can confirm that what I've marked as
14 Exhibit No. 3 is the same as the article you
15 referenced and for purposes of the transcript, I'll
16 identify Exhibit No. 3 as an article entitled --
17 correct me if I'm wrong -- "Inhalation of Asbestos
18 and Cigarette Smoke by Hamsters," by A.P. Wehner,
19 et al., with a date of March 16, 1975.
20 Is that the same article?
21 A. Yes, it appears to be.
22 Q. Okay. And on the cover page of the
23 article -- of the exhibit that I gave you, it's a
24 cover page of the journal from which it came,
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1 Environmental Research. Do you see that?
2 A. Sure.
3 Q. Okay. Do you see the Editor-in-Chief,
4 Irving Selikoff?
5 A. Uh-huh.
6 Q. Under associate editors, do you see the
7 name E. Cuyler Hammond?
8 A. Yes.

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Q. Do you know who E. Cuyler Hammond was?
A. He was investigator with Selikoff.
Q. Do you have an understanding of his credentials?
A. No.
Q. How about Paul Kotin listed there?
A. Don't know him.
Q. Never heard of the name?
A. Nope.
Q. Okay. Turning your attention to the article itself, you pointed me earlier to a statement in the abstract that says, "Neither a carcinogenic effect of asbestos nor a co-carcinogenic effect of cigarette smoke was observed." Do you recall pointing to that?
A. That's correct.

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Q. Is that a statement that you believe is supportive your opinion that there's no synergy?
A. The co-carcinogenic effect, the lack of it doesn't support synergy.
Q. Okay. But you skipped over the sentence prior to that?
MR. DUNCAN: Objection. He may not have read it.
MR. STOLPER: I'll take the -- the fact that you're objecting to the question when I'm finished asking it.
MR. DUNCAN: Correct.
Q. (By Mr. Stolper) Do you see the sentence that precedes it that reads, "However, perhaps on account of their significantly shorter life span due to asbestosis, the incidents of laryngeal lesions of malignant tumors was significantly lower in the asbestos plus smoke-exposed group than in the control group having received smoke exposures." Do you see that?
A. Yes.
Q. Okay. Now, doesn't that explain -- isn't the explanation for the lack of a co-carcinogenic effect due to the fact that the hamsters died

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prematurely due to asbestos and didn't have a chance to develop tumors?
A. They -- they certainly developed asbestosis. That could be one explanation for it, but one of the other interesting things is the -- that they simply -- they simply did not report a co-carcinogenic effect.
Now, what we're talking about, what you were -- what is supposedly described in Selikoff, these massive effects, you just don't see that here.
Q. But the authors give a perfectly plausible explanation why you don't, don't they?
MR. DUNCAN: Objection as to characterization of what's written there.
A. I mean, they have one explanation of why they don't think that was the result they were looking for.
Q. Do you disagree with the reason that they've given?

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A. It's one of the -- it's one possible reason, but it's not -- it's -- to go from there to say that -- that this says that this shows that there's synergy, is not reasonable.
Q. I understand that, but it also doesn't
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show -- isn't it similarly unreasonable to use this study to conclude that there is no synergy?
A. What I'm saying is that the data is inconsistent. That's what's in my report. The animal data is -- especially the Churg is uniformly negative in terms of what they find. They don't find a co-carcinogenic effect.
Q. We'll get to Churg. You cited Wehner. I wanted to focus on what this article says.
A. It's not inconsistent with what I have here.
Q. Okay. It doesn't -- this article doesn't -- it says right out it doesn't demonstrate a co-carcinogenic effect?
A. Correct.
Q. In other words means it doesn't demonstrate a synergistic effect?
A. Okay.
Q. But the authors also explain the reason why they didn't get that effect.
MR. DUNCAN: Now, I have to object there. The author say, "However, perhaps on account," doesn't look like the authors are explaining why. It looks like they're offering a
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possible explanation. You keep characterizing it the wrong way.
Q. (By Mr. Stolper) That's what's known in the art -- in our art form as a speaking objection to let you know that my question is not all clear. I'll rephrase it. The authors -- the authors posit a reasonable explanation as to why they didn't develop a co-carcinogenic effect using hamsters in this study; correct?
MR. DUNCAN: Objection.
A. They posit one reason in their abstract, yes, why they didn't see it.
Q. (By Mr. Stolper) It's not your opinion that this article is proof that there is no synergy?
MR. DUNCAN: Objection.
Q. (By Mr. Stolper) Correct?
MR. DUNCAN: Objection.
A. I'm sorry? My report doesn't say that -- in my report it talks about the animal literature and that in this case it's uniformly negative. It doesn't show a synergistic response. That's what my report shows. It doesn't show a synergistic response.
Q. Are you familiar with the author by the
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name of Wagner?
A. I know -- which Wagner are you talking about.
Q. Wagner. Not Wehner.

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A. I know, Wagner.
Q. J.C. Wagner?
A. Yes.
Q. Wagner is somebody you cite to more than 10 times --
A. Right.
Q. -- in your report; correct?
A. (Nods head.)
Q. Did you review all of Wagner's articles that are cited in your report?
A. Yes.
Q. Do you recall the conclusions that Wagner reached with regard to synergy?
MR. DUNCAN: Objection as to which article.
Q. (By Mr. Stolper) In any of the articles.
A. We'd have to -- we'd just have to go through them.
Q. Okay. We will, but do you have -- as you sit here today, do you recall whether Wagner is

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somebody who agreed with your conclusions, your opinions with regard to synergy?
MR. DUNCAN: Same objection.
Q. (By Mr. Stolper) You can answer.
A. Oh, I'm sorry. That I believe in some of the articles he says -- he describes that there may be a synergistic effect.
Q. Okay. And as you sit there, do you recall what was it about Wagner's research that made you discount or discard it and reach a different conclusion than Wagner?
MR. DUNCAN: Objection. If we're going to talk about a specific paper, let's let the doctor look at it.
Q. (By Mr. Stolper) You can answer the question.
A. I don't know what paper you're talking about, so we need to get to the individual paper.
Q. Well, we'll get there when we get there. I asked you a question. You said you have an understanding that Wagner in some papers or in a paper may have demonstrated synergy, and as you sit here, I'm entitled to know -- you know, you've looked at this literature. You got paid some money

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to look at this and reach opinions.
I'm entitled to know what you know without me refreshing your recollection as to the specific ones, and we'll get to them. I'm not meaning to ask you trick questions, but I'm entitled to know as you sit here what your recollection of Wagner is.
My question is: What is your recollection as to why you disregarded or disagreed with Wagner's conclusions that there may be synergy?
MR. DUNCAN: Well, objection. Argumentative. And he's already said that he needs to get down to the individual paper, so whether it's a question refreshing his recollection or out of fairness to the witness in quizzing him on something that you've got in front of you that you're reading

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from that he doesn't, I think he ought to be offered the paper to look at.
Q. (By Mr. Stolper) You can answer.
A. I just -- I don't remember without looking at the individual paper how -- I don't know how to respond to your question without looking at the individual paper. I don't know.
Q. (By Mr. Stolper) There are 10 articles listed on Exhibit C that are authored by Wagner, do
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you agree, or do you need to check your -- here, you can look at mine. Ease of reference.
A. All right. Okay.
Q. Would you agree that there are no other authors that are cited as many times as Wagner in Exhibit C?
MR. DUNCAN: Objection. Lack of foundation.
A. Do we need to go through this thing completely? I mean, one name comes to mind that might be just as many, that would be Davis.
Q. (By Mr. Stolper) Well, would you agree that Wagner is at the top of the list in terms of volume of people you've relied on in your list? And you are right, Davis does have more.
A. He's certainly one of the people that I relied on.
Q. Wagner?
A. Yes.
Q. But to a greater extent than some of the other authors identified in Exhibit C?
MR. DUNCAN: Objection. Mischaracterizes the testimony.
MR. STOLPER: It's a question.
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Q. (By Mr. Stolper) Did you rely on Wagner to a greater extent than any of the authors on your Exhibit C?
A. No.
Q. So by the sheer fact that you refer to 10 of his articles, doesn't signify that you rely on Wagner more than other authors?
A. True, yes, that's correct.
Q. Is the same true for Davis?
MR. DUNCAN: Objection.
Q. (By Mr. Stolper) Davis I'll represent to you appears 21 times on your Exhibit C. Is it your opinion that you don't rely on Davis any more than any other author?
MR. DUNCAN: Objection. Argumentative.
Q. (By Mr. Stolper) You can answer.
A. I really -- the number of papers doesn't directly correlate to how much I rely on that author.
Q. What does it correlate to?
MR. DUNCAN: Objection.
A. It -- it may correlate to different things. It may correlate to -- to many different
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things.
Q. Do you recognize the name Arnold Brody?
A. I'm sorry. In what context?
Q. As someone who's authored an article that you relied on.
A. I do remember reading a Brody, yes.
Q. Do you recall an author by the name of John Craighead?
A. I'd have to look at that. I'm sorry.
Q. Please do.
A. There are a lot of -- like I said, there are many authors here.
MR. DUNCAN: Counsel, when you get to a break point, we'll take a brief break.
MR. STOLPER: We'll get an answer, and we'll take a brief break.
A. Yes.
Q. (By Mr. Stolper) Do you recall the conclusions of Dr. Craighead?
A. Not -- not right off the top of my head, no, I'm sorry.
MR. STOLPER: Okay. Why don't we take a brief break.
THE VIDEOGRAPHER: Off the record.

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The time is 4:58 p.m.
(Brief recess taken.)
(Whereupon, Dulaney Deposition Exhibit Nos. 4 and 5 were marked for identification by the reporter.)
THE VIDEOGRAPHER: Back on the record. This is the beginning of tape No. 4. The time now is 5:05 p.m.
Q. (By Mr. Stolper) Doctor, we were talking about Wagner shortly before we took the last break. We've put before you what's been marked as Exhibit No. 5, which for the record is an article entitled "Diseases Associated With Exposure to Asbestos Dusts" by J.C. Wagner.
And I'll represent that it's one of the articles identified on your Exhibit C?
A. Right.
Q. You've seen this article before?
A. Let me make certain this is the same. I mean, I'll trust what you're saying.
MR. DUNCAN: Well, just check it out, Doctor.
Q. (By Mr. Stolper) You can check it out.
A. Okay. (The witness complied.) Yeah, yes,

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this is the one, uh-huh.
Q. Okay. I would like to draw your attention, if impossible -- feel free to refamiliarize yourself with the article, but I'm going to ask you a question about the section on page 31, which heading, Carcinoma of the Lung.
A. Right, okay.
Q. Do you see that section?
A. Yes.
Q. Now, Wagner is somebody we've established you've cited to 10 times on your list; correct?

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A. Yes.
Q. And he says here under carcinoma of the lung, in an article entitled "Diseases Associated With Exposure to Asbestos Dusts," "The risk of a smoking asbestos worker contracting lung cancer is considered to be 50 to 100 times greater than that for an age-matched nonexposed nonsmoker. This estimate can only be criticized in one respect: There are so few asbestos workers who are not smokers that the majority of the evidence on exposure to asbestos and lung cancer relates to smokers."
Do you see that?

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A. Yes.
Q. Do you agree with Dr. Wagner's statement?
A. Certainly not the first part in the first sentence.
Q. That it's considered to be 50 to 100 times greater than that age matched?
A. Yes.
Q. How about the second part?
A. That there are so few asbestos workers who are not smokers, one of the problems that I have here is it doesn't tell us in what cohort, in what group it's talking about. This is just -- and it's an uncited statement. Both of these are uncited statements.
Q. So you disagree with the point that he makes because they're uncited?
A. As I stated, there are certain papers in here that I disagree with.
Q. Okay. And so you consider Wagner somebody you'd disagree with?
MR. DUNCAN: Objection. That's not what he said.
A. I disagree with this statement in that the risk of -- the 50 to 100 times. It's -- it's a

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simple statement.
Q. Okay. In your -- you talked this morning about your role as a toxicologist and as part of your role as a toxicologist, you talked to groups of people who are at risk of potential exposure to toxic agents; is that right?
A. That's paraphrasing what I said, but, yeah, I do talk to people who have concerns about it, and they want to know what the risks are, yes.
Q. Okay. I'd like to draw your attention two paragraphs down in the Wagner article and I'll quote what I'm referring to. He states in this article, "It is of the utmost importance to dissuade present or past asbestos workers from smoking cigarettes." Do you see where it says that?
A. Yes.
Q. Would you agree with that statement that he makes?
A. I would agree that it's important to dissuade anyone from smoking cigarettes.
Q. Okay. Would you agree that it's more important to dissuade asbestos workers to stop

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smoking?
A. Asbestos workers have an additional risk
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factor in that exposure to asbestos, so any more important, no, I would say it's equally important to them as it is to anyone else, the answer to my question -- to your question would be no.
Q. Okay. What else do we have in front of you. I think we're done with this. You can move that off to the side.
Yeah, if you could draw your attention to Exhibit No. 4, which for the purposes of the transcript is an article that appears in the British Journal of Industrial Medicine by the first author Yasuo Morimoto entitled, "Synergistic Effects of Mineral Fibres and Cigarette Smoke on the Production of Tumor Necrosis Factor by Alveolar Macrophages of Rats."
And I'll represent to you that this -- do you recognize this article?
A. Yes, it's on my list.
Q. Okay. Did you review it?
A. Yes, I did.
Q. Okay. Do you recall the sum and substance of the article?
A. And I do remember that it was a measure of whether there could be an increase in tumor -- of
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tumor necrosis factor associated with exposure, and I believe it was chrysotile, but I'm not sure of the exact -- of everything about this. I can -- I'll need to go read through it a little bit.
Q. For purposes of the jury, who may not know what tumor necrosis factor by alveolar macrophages of rats, is that relating to the production of cancerous tumors?
A. I'm not a tumor biologist, so I am not sure what is the actual effect of tumor necrosis factor in cancer biology.
Q. Do you know what tumor necrosis factor means?
A. Yes, I know what it is, but I don't know its relationship.
Q. In laymen's terms can you describe what it is?
A. Well, it's a protein that's released from macrophages, but I'm not sure what its role is in terms of cancer biology. This is not an area of my expertise.
Q. Okay. If I draw your attention to the last sentence of the abstract which reads, "The findings suggest that cigarette smoke and mineral
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fibres have a synergistic effect on TNF --" which is previously defined as tumor necrosis factor -- "production by alveolar macrophages." Do you see where it says that?
A. Yes.
Q. That statement and the findings in Morimoto's article are in conflict with your opinion

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in this case; isn't that right?
MR. DUNCAN: Objection.
A. I'm sorry.
Q. (By Mr. Stolper) Is this one of the articles that you disagree with that's on Exhibit C?
A. What this -- this article does not deal with -- the endpoint is not the toxicological endpoint that I'm evaluating, so I don't disagree with their conclusions. I don't think that it supports a synergistic relationship in lung cancer.
Q. How about asbestosis?
MR. DUNCAN: Objection.
Q. (By Mr. Stolper) Change the endpoint to asbestosis.
A. I don't know if you can demonstrate that this is a critical component in -- I don't -- I'm just not a cancer biologist or asbestos expert. I

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have no idea what is the effect of tumor necrosis factor in asbestos.
Q. So it could be that this article is -- it's an animal study, would you agree?
A. Yes.
Q. It could be, then, an animal study that's supportive of synergy with the endpoint being lung cancer, and you just don't have the ability to determine -- to determine that; is that right?
MR. DUNCAN: Objection.
Argumentative. Lacks foundation.
Q. (By Mr. Stolper) You can answer.
A. As a toxicologist, one of the things I would not do is make that jump that you just made to go from an effect to tumor necrosis factor to that this as evidence of synergy in animals to develop cancer. That's a big jump.
Q. But it could be -- but this article could be supportive of the epidemiological data that suggests that there's a synergistic relationship?
MR. DUNCAN: Objection.
A. Could be is just speculation. That's just guessing.
Q. (By Mr. Stolper) Let me draw your

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attention to the last paragraph of the article. For purposes of the transcript, I'll quote it.
A. Okay.
Q. "Our results show that cigarette smoke in mineral fibres had a synergistic effect on the production of TNF by alveolar macrophages, supporting the epidemiological evidence that an interaction between smoking and exposure to asbestos affects the incidents of lung fibrosis."
Do you see that?
A. Yes, I do.
Q. Do you disagree with the findings?
A. I do.
Q. Okay. How come?
A. This -- this statement makes the jump that production of TNF, a synergistic effect on the production of TNF leads to -- can directly be related to epidemiological studies between smoking

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and asbestos. That's just an unsupported jump.
Q. Why is it an unsupported jump in your opinion?
A. This has no toxicological foundation. That's -- there's no toxicology. That's just something that as a toxicologist I would never do.
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I wouldn't make that jump.
Q. What's missing?
A. Well, I'm not a cancer biologist and this is not my area of expertise, but just as a general scientist, you have to show that these two things are related.
Q. How do you know they're unrelated?
MR. DUNCAN: Objection. That's not what he said.
A. I'm sorry. But in science it just -- in science in general simply because you need to show that two things are related before you can say they are.
Q. (By Mr. Stolper) Do you think that they are unrelated?
A. I'm not a cancer biologist, so I don't know.
Q. So if you do not know if they're unrelated, how do you know if they're related or not?
MR. DUNCAN: Objection.
A. If -- if these -- if the authors had stated that TNF has been shown -- in other words, truly stepwise process, that they could show a
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natural logical progression between what their results are and the epidemiological, that's completely different from what they've said there. That's what it would require.
Q. But it could be -- it could be assumed in this journal that the reader knows the effects of TNF and the role that TNF plays in the cancer causative chain, couldn't it?
A. You would have to ask a cancer biologist whether that information is known before I could make the assumption that everyone else knew.
Q. So you don't have enough information to know whether or not TNF -- whether you can jump to the conclusion that the authors do about TNF in this article?
A. Based on what I see here, there is -- they did not give me enough information to make that jump.
Q. Okay. Let's assume you're correct. They didn't give you enough information. Isn't it also possible that for purposes -- that the reader -- that the intended audience for this had an assumed scientific background more extensive than yours?
MR. DUNCAN: Object. I'm sorry.
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MR. STOLPER: Go ahead.
MR. DUNCAN: Objection. Speculation.
Q. (By Mr. Stolper) Go ahead.

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A. Without sounding redundant, that is just sheer speculation.
Q. You mean redundant of him?
MR. STOLPER: I just couldn't let that one go.
MR. DUNCAN: Thanks both of you.
Q. (By Mr. Stolper) Moving right along, we're going to -- oh, boy, Doctor, in the interest of time, I'm going to probably avoid marking some exhibits. I'm going to hand you my copy after I read it into the record, and I'll represent to you that the next series of articles that I'd like to show you all came from your Exhibit C.
I'm going to ask you for each of them, to confirm -- or whether or not you recognize them as coming from Exhibit C, and I'm going to ask you what the relevance to your opinion is for each of these articles, okay?
MR. DUNCAN: Wait. With a prearranged time to break the deposition, it seems to me a little bit hopeful that we can go throughout -- I

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don't know how many articles you've got there -- 10 or 15, and have Dr. Dulaney explain right off the top of his head what the relevance is and zip through it in just a few minutes.
MR. STOLPER: We'll give it our best shot.
MR. DUNCAN: Well, as long as you -- fine, go ahead. Go ahead and start. We'll see how it goes.
MR. STOLPER: I'm sure I'll hear foundation experts at some point.
Q. (By Mr. Stolper) First one, an article by Wagner, "A Pathological and Mineralogical Study of Asbestos-Related Deaths in the United Kingdom in 1977."
A. Okay.
MR. DUNCAN: Do we have an extra copy?
MR. STOLPER: I do, but...
(Whereupon, Dulaney Deposition Exhibit No. 6 was marked for identification by the reporter.)
Q. (By Mr. Stolper) Let me know when you've had a chance to look it over.
A. Okay.

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Q. You've had a chance?
A. Yes.
Q. Do you recognize the document?
A. Yes.
Q. Is it one of the ones on Exhibit C?
A. Yes.
Q. Okay.
MR. DUNCAN: And which are we talking about now?
THE WITNESS: This one right here.
MR. STOLPER: Not the one I gave you. That's the next one.
MR. DUNCAN: All right.
Q. (By Mr. Stolper) Can you tell me how that

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document is relevant to your opinion?
A. Well, I wanted to know in this situation were there differences in the different types of asbestos in their definitions?
Q. Why would you want to know that?
A. For completeness to know if there were differences. When I'm looking at this information, I want to know are there -- will I see differences between different types of asbestos because it may make a difference in whether or not the results are
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different.
Q. Did you find any differences among fiber type?
A. There are -- this report does talk about that there are differences, although it is a preliminary report. It does say that there are differences between the chrysotile and amphibole type.
Q. And the endpoint is lung cancer?
A. No, the endpoint is --
Q. Mesothelioma?
A. It's mesothelioma.
Q. Okay. Why would that be relevant to you?
A. It is a toxic effect associated with exposure to asbestos.
Q. Is it your understanding that mesothelioma is an endpoint that's at issue in our case?
A. No.
Q. So why as a toxicologist when you said endpoints are so critical to your analysis, why would you concern yourself with endpoints that are unrelated to the exposures and diseases in our case?
A. For completeness.
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Q. Why would it be complete to study diseases caused by agents that are unrelated to diseases at issue here?
A. It would be complete to know --
MR. DUNCAN: Objection. I think that -- I don't know if you stated that correctly or not. You said agents related to diseases that are not at issue here. So he shouldn't study asbestos, is that what you're saying?
Q. (By Mr. Stolper) I'll say it over. Why would -- why would you consider it -- if you're asked -- you've been asked in this case to review the literature to see if there's support for synergy between asbestos and smoking in causing lung cancer; is that correct?
A. To provide my opinion on that, yes.
Q. And any other diseases that you were asked?
A. No.
Q. Okay. You weren't asked to opine on asbestosis?
A. No. I'm not an expert in asbestosis.
Q. Okay. Do you consider yourself an expert now in asbestos -- in lung cancer?
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A. I consider myself an expert in toxicology and the toxicology of asbestos as part of my practice, yes.
Q. Okay. Why would you need to know about mesothelioma in determining whether or not there's a synergistic effect in causing lung cancer?
A. I'm sorry. What I'm talking about here is for completeness, for completeness of information. There are some things in here that agree with what I say. Some things that disagree with what I say. Some things are there for completeness, so provide the knowledge base of which I use to base my opinion.
Q. Okay. And the question I'm asking -- when you say it's complete, it means it's somehow important or relevant. You need to complete a puzzle or something.
I'm now asking why do you need that to complete your analysis?
A. What I wanted to know is if there were differences in human studies in different areas. Do different types of asbestos go to different areas? And I believe that was the reason I -- I included this paper.
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Q. You think the question of whether or not asbestos causes mesothelioma is relevant to deciding whether or not asbestos with cigarette smoke can cause an increased risk in lung cancer?
MR. DUNCAN: Objection. I think this question's been asked and answered.
Q. (By Mr. Stolper) You can answer.
A. The two effects don't seem to be related and from a toxicological standpoint, they don't seem to be related to one another. Mesothelioma seems to be separate from lung cancer.
Q. So they're unrelated?
A. Right.
Q. And you do recognize that you have a significant amount of -- well, you have a number of articles that relate to mesothelioma on Exhibit C; correct?
A. Yes, that's part of what the paper's about, yes.
Q. Okay. If mesothelioma is unrelated to lung cancer, why do you feel the need to study articles on mesothelioma?
MR. DUNCAN: Excuse me. Objection. Counsel, if he answers it again, it will be about
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the fourth time. He said for completeness. If you don't accept the answer, you don't accept it. May we move on?
A. Literally that, for completeness, to get as much information as I can.
Q. (By Mr. Stolper) Asbestos causes disease other than lung cancer and mesothelioma; correct?
A. Yes.
Q. Okay. You didn't include studies about asbestos causing those other diseases; right?

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MR. DUNCAN: Objection.
Q. (By Mr. Stolper) You're aware that asbestos causes pleural plaque?
A. Yes.
Q. You didn't include any studies that relate to asbestos causing pleural plaque disease; correct?
A. I remember --
MR. DUNCAN: Objection.
A. -- I remember reading them, but I don't remember -- I don't think I put --
MR. DUNCAN: Counsel, if you want to ask him, maybe he could have a chance to look at his list.

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MR. STOLPER: I don't think it's a complicated point.
MR. DUNCAN: Counsel, I know -- excuse me. I know it's not a complicated point, but out of fairness to the witness if you're going to ask him did he put something in with this particular endpoint, he should be able to look and see if he did.
A. For example, you're talking about the pleural plaques, the associate between asbestos-related pleural plaques and resting hyperventilation. It's on my list. So in answer to your question, here's a paper on pleural plaques, asbestos-related pleural plaques.
Q. Are you aware -- okay. Are you aware of asbestos causing disease other than lung cancer, mesothelioma, or pleural plaques?
A. I have read studies that say that there's some relationship between benign pleural disease and asbestos exposure.
Q. Okay. Do you know if you have any studies relating to benign pleural disease on your list?
A. I would have to -- again, I'd have to go

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through this line by line. I mean, even this is difficult because many of them, for example, they're review articles of diseases associated with asbestosis.
Q. When you're doing risk assessments and you're working with a particular endpoint, you had given a Dioxin example this morning.
Is it your practice to study all endpoints caused by a particular toxic agent?
MR. DUNCAN: Objection.
A. I try to do as thorough a job as I can with toxicology to study all the endpoints, yes, that's my practice.
Q. (By Mr. Stolper) Even when only one of several endpoints is at issue at any particular given site, environmental site?
A. For completeness, yes, I try to learn as much as I can about the chemical.
Q. What did you learn about mesothelioma -- asbestos causing mesothelioma in your review of these articles that bear relevance to the lung

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cancer question?
MR. DUNCAN: Objection. Compound question.

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Q. (By Mr. Stolper) You can answer.
A. That's a very complex question.
Q. Well --
A. My previous answer is the two are not related to one another. I mean, that's certainly that I learned about that. Besides that, I would just -- because I did focus later on lung cancer, and I studied so many papers, I'd have to go back and do some additional review on that.
Q. When you gave your search criteria to your contract librarian, did you -- was lung cancer a term, do you recall?
A. I told you, I don't remember what the --
Q. I know you don't remember all of them. You knew some of them. Do you recall whether lung cancer was one of them?
MR. DUNCAN: Objection. Argumentative.
A. I just don't remember if it was or not.
Q. Okay. I'm going to show you another article. It's an article entitled "The Comparative Effects of Three Chrysotiles by Injection and Inhalation in Rats" by Wagner. Again, I represent this came off your Exhibit C. I'm handing you my

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copy.
A. Right.
MR. DUNCAN: Counsel, do I have that one?
MR. STOLPER: You should. No, you don't, because I don't.
MR. DUNCAN: Counsel, I know you're kind of helter-skelter there. We can't get a copy of that to look at?
MR. STOLPER: I can give you one afterwards. That's the problem, I have to find it in that box.
MR. DUNCAN: All right.
(Whereupon, Dulaney Deposition Exhibit No. 7 was marked for identification by the reporter.)
Q. (By Mr. Stolper) Do you recognize the document?
A. Yes, I do.
Q. Is one of the ones that came off Exhibit C?
A. I believe it is, yes.
Q. Okay.
A. I'm trying to do two things at one time.

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Q. Okay.
A. This is the...
Q. Can you tell me why you included that?
A. This is one of the ones that I wanted to see in rats, in effect, is there going to be a difference -- and I'm paraphrasing what the -- what

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the study was actually doing -- is there differences between injection and inhalation when you administer -- when you administer chrysotile.

Q. Do you recall the conclusion? Did you reach a conclusion?

A. No. Again, this was one of the studies that -- that I used for completeness. The part that you have highlighted here in the back is certainly one that I agree with, certainly a statement that I agree with, but --

Q. What's the statement for purposes of the transcript?

A. "There are clear dangers in extrapolating from injection experiments to man. A positive result may be regarded as an indication that an inhalation experiment may need to be carried out."

I would say agree -- I would say that that's a very definitely true statement.

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Q. Okay. But then would you agree that inhalation studies can be extrapolated to humans?

A. No.

Q. You disagree?

MR. DUNCAN: Objection. Overbroad. Vague. I'm sorry. Incomplete hypothetical, but go ahead.

A. That's a very broad statement, inhalation of what?

Q. (By Mr. Stolper) We're talking about in the context of that article, context of exposure to asbestos and cigarette smoke.

A. Now, we're -- okay, this is a study of asbestos alone.

Q. Okay. Now, let's take a step back from that. I'm going to ask you a different line of questions here. I understand that this list is a culled-down list from all the articles that you initially identified; correct?

A. Yes.

Q. You described this as your list of relevant documents, documents relevant to your opinion in this case?

A. That helped me come to my opinion, yes,

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that's exactly.

Q. Okay. Is it your opinion that looking at articles about mesothelioma helped you reach your opinions in this case?

MR. DUNCAN: Objection. That's one more way to ask the same question now about six times to the Doctor. I think he's already asked and answered, but, Doctor, go ahead.

Q. (By Mr. Stolper) You can answer.

A. In terms as a toxicologist, what I want to do is get a complete picture of the entire disease process associated with a chemical exposure and then from that I can provide my opinion. My opinion may be more narrow than the field of study, but for completeness, I may look at large numbers. This is a completeness issue and continues to be.

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Q. Now putting before you what's been marked as Exhibit 7, which is an article entitled "Chronic Inhalation Exposure to Hamsters to Nickel-Enriched Fly Ash" by Alfred Wehner, dated 1981. I represent to you that it's off of Exhibit C.
A. Uh-huh.
(Whereupon, Dulaney Deposition
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Exhibit No. 8 was marked for identification by the reporter.)
Q. (By Mr. Stolper) Doctor, just let us know when you've had a chance to review the article.
A. Okay.
Q. And the two questions I pose to you is: One, do you recognize the document, and two -- well...
A. Perhaps my eyes are a little bad. I don't see a Wehner, 1981 paper on my list.
Q. My apologies. I was wondering why this was relevant to your claim. Now I know why.
A. I was truly surprised to see that.
Q. Okay, well, I hope you enjoyed the read.
(Off-the-record discussion.)
Q. (By Mr. Stolper) In your report, you take issue with the animal studies because you say they do not accurately replicate human occupational or environmental exposures. That's in the first page that has your opinions on it.
A. You've given me a lot of things. I may actually have lost my opinion. I'm sorry. Maybe -- actually -- I'm sorry. This is it right here. My bad.
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Q. It's the end of the day.
A. Yeah. Okay, are you talking about --
Q. On your opinions, the last paragraph --
A. Okay.
Q. -- you say, "The animal studies I have examined do not accurately replicate human occupational or environmental exposures." Do you see that?
A. Yes.
Q. Is that true for all the animal studies that you reviewed?
A. The animal studies that I reviewed, certainly they attempt to -- for in a couple of asbestos studies, but when the two of them are together, I mean, there's -- that's correct. They do not accurately reflect that.
Q. Is that true of the Wehner article as well?
A. I'm sorry now?
Q. The Wehner one that you had cited to earlier with Churg.
A. Well, the accurately replicating the environmental exposures, we don't know, for example, what their dose is, so it's impossible for them to
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accurately replicate that. They're attempting to do so, and then in terms of the smoking activity, does

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that accurately reflect the smoking activity?
So the majority of the studies -- the studies that I have examined do not accurately replicate those two.
Q. Just so I understand your criticism of the animal studies, it's not so much that they employed the wrong methodology, but it is that they lacked sufficient information about exposure and smoking?
A. Yes, to replicate a human exposure situation.
Q. Okay. But you don't say that in your report, do you, that it's the lack of information that limits the animal studies?
MR. DUNCAN: Objection. Argumentative.
Q. (By Mr. Stolper) You can answer.
A. An example that I give here is that -- the example that I do give is placing material in the animal's trachea. I mean, that is certainly not what occurs in the human occupational scenario.
Q. That's -- I understand you're taking
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issue with the methodology that's used in these animal studies; correct?
A. Okay, they do not accurately replicate occupational or environmental exposures.
Q. Right, but the reason you gave just a minute ago was that they couldn't replicate it, because they don't know what to replicate was the reason. They were lacking information; correct?
A. That's part of the problem, yes.
Q. My only question to you is: You don't say that that's part of the problem in your report?
A. No, I don't.
Q. Okay. But you do say that you take issue with the installation method; correct?
A. Yes.
Q. So you -- what method would you prefer?
MR. DUNCAN: Objection. Go ahead.
Q. (By Mr. Stolper) You can answer.
A. Inhalation for inhalation exposures.
Q. Now, you also take issue with MTD, maximum tolerated dose; correct?
A. Yes, that's correct.
Q. What methodology would you recommend?
MR. DUNCAN: Objection.
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Q. (By Mr. Stolper) Other than MTD.
A. Well, again, we're talking about where in the dose response curve you are. You want to have doses that are reflective of your exposures, and you want to have a dose that's not the maximally tolerated by a particular animal, because if that's all the insult that they can absorb in a toxicological standpoint, how can you study an interaction?
If chemical 1 takes you to a threshold, how can you study chemical 2, the effect of chemical 2, when chemical 1 takes you to the maximum tolerated dose?
Q. So your position would be that MTD is

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inappropriate to use when you're studying the effects of confounding factors?
A. When you're looking at -- if you're going to look at interactions, you can't take the first scale all the way to the top and then try to study it.
Q. You think is that a generally-accepted principle of toxicology?
A. That if you want to go to the top of the scale and then if you want to study something to take you even higher, you can't do that?

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Q. If you want to study interactions.
A. You want to use lower doses in the MTD.
Q. So any study that's trying -- any study that relates to synergy that's employing the MTD method, you would find erroneous?
MR. DUNCAN: Objection. Vague. Overbroad. Mischaracterizes his testimony.
A. I would describe them as methodologically flawed.
Q. Okay. Now, you say in the next page, you see the paragraph that begins the "foregoing analysis"?
A. Yes.
Q. At the end of that paragraph, the last clause states you would obtain information about the type of asbestos encountered, including fiber type. Do you see that?
A. Yes.
Q. That's something you normally would do in conducting your investigation?
A. Yes.
Q. Is that something you think is required in order to investigate whether there is synergy?
A. For completeness, I would need to know

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all types, what other factors? Are all asbestos the same?
Q. When you say completeness, I understand that you would include them on your list and review them in the first instance, but once you have reviewed them, do you rely on those studies -- well, let me back up.
Having reviewed the literature as you have about asbestos, do you consider fiber type a relevant consideration in investigating whether or not there's synergy?
A. Yes.
MR. DUNCAN: Objection.
THE WITNESS: I'm sorry?
MR. DUNCAN: No. Go ahead.
MR. STOLPER: The record will note his objection.
A. Yes.
Q. (By Mr. Stolper) Why is fiber type relevant?
A. Fiber type tells you much about the type of asbestos in terms are you talking about long fibers, short fibers? Are you talking about chrysotile? Are you talking about amphiboles.

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Q. Those are the different type of fibers. My question is why is that relevant to your investigation?
A. If you can't lump all asbestos into one group, if you want to study asbestos and you know there are different forms of asbestos, you want to know is one form more toxic than another form?
Q. But in answering the threshold question of whether or not all asbestos is toxic when combined with smoking, you don't need to know fiber type distinctions, do you?
MR. DUNCAN: Objection.
A. This is characterizing things as I don't need to know information to come up with a conclusion, and I can't answer that question.
Q. (By Mr. Stolper) You have a statement here, the third bullet point, which reads "Asbestos exposure is so toxic that it may be difficult or impossible to evaluate the effects of any other concurrent occupational or lifestyle exposures." Do you see where you say that?
A. Yes.
Q. Can you explain what you mean by that?
A. Asbestos exposure -- asbestos is the
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first carcinogen I've seen -- I've come across other than ionizing radiation where your risk doesn't go down after exposure stops.
Q. Your risk for disease doesn't go down after your exposure to asbestos stops?
A. Correct.
Q. Okay. Let's assume that. Why does that fact make it impossible -- or make it difficult or impossible to evaluate the effects of -- well, let me break it down. You say any other concurrent occupational or lifestyle exposures.
Are you referring to cigarettes, cigarette smoke?
A. I'm talking about all potential confounders, which would include cigarette smoke.
Q. Okay. Why would the fact that asbestos exposure, that the cessation of asbestos exposure not -- well, let me say that a little differently.
When you say asbestos exposure is so toxic, what do you mean by that?
MR. DUNCAN: Objection. Asked and answered.
Q. (By Mr. Stolper) You can answer.
A. It's a very toxic complete carcinogen.
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Q. Is it more toxic than cigarette smoke?
A. You can't tell. Now you're talking about a potency effect.
Q. Well, you refer -- you used the term "toxic"?
A. That's correct.
Q. Okay. So and you're referring to it in the --
MR. DUNCAN: Counsel, I'm sorry. I

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don't mean to interrupt you in mid-question here. We're at 6:00. Do we get a break here or are you going to --

MR. STOLPER: I'd just like to try to finish up.

MR. DUNCAN: About how long do you expect?

MR. STOLPER: Just a couple minutes.

MR. DUNCAN: Okay.

Q. (By Mr. Stolper) When you say it's so toxic, there's a suggestion of quantification, so I'm asking you in contrast to cigarette smoke, would you consider cigarette smoke more toxic than asbestos?

A. That's a potency question.

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Q. Okay.

A. Which one is more potent? Since we don't have a dose response for asbestos, I can't answer that question.

Q. How about -- do you have an independent factor? Do you know which has a greater baseline incidence of disease; correct?

MR. DUNCAN: Objection.

Q. (By Mr. Stolper) You can answer.

A. Okay. You're comparing apples and oranges here. The disease is the effect. The potency is the dose, relates to the dose. Until you know what the dose is, until you know what the shape of the dose response curve is, you can't know what the dose -- you can't make that comparison.

Q. Did you review the 1985 Surgeon General's report?

A. Yes.

Q. Is it identified in your Exhibit C?

A. No. I didn't rely on it.

Q. Didn't help you formulate your opinion?

A. No.

Q. How come?

MR. DUNCAN: Objection. How's he

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supposed to answer a negative like that, Counsel?

Q. (By Mr. Stolper) You're aware that the 1985 Surgeon -- well, let me start it this way. The 1985 Surgeon General's report is one of the documents that was part of your larger universe of documents you reviewed?

A. I did read it, yes.

Q. It was one of the ones that you discarded as not relevant to your opinion?

MR. DUNCAN: Objection. Mischaracterization of discard.

A. I never said it was irrelevant to my opinion.

Q. You consider the '85 Surgeon General's report relevant to your opinion?

A. No. I just didn't rely on it.

Q. Okay. Well, just let's answer the question. Is it relevant or not to your opinion?

A. It has no relevance to my opinion.

Q. Now, you're aware that the Surgeon

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General's report reaches conclusions about synergy, the '85 Surgeon General's report?
A. Yes.
Q. Do you know what conclusion it reached?
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A. The exact wording of it, no.
Q. Generally?
A. It -- it said that it believed that there was -- I just -- I don't want to -- out of context, I mean, I don't mind describing what it says, but I would like to read it just to make certain that I'm correct.
Q. You can't give a general overview of what the '85 Surgeon General report concluded with regard to synergy?
MR. DUNCAN: Objection. Counsel, he already said he'd like to see the document. If we're going to quiz him on it, let's have him see it.
MR. STOLPER: I'm asking for a general statement.
Q. (By Mr. Stolper) What's the conclusion of the '85 Surgeon General's report with regards to synergy?
MR. DUNCAN: Counsel, he's already answered that question.
MR. STOLPER: You can answer.
MR. DUNCAN: Excuse me. We're not trying to pepper this record with --
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MR. STOLPER: Are you instructing him not to answer because I'm short on time, and I don't want you to give a speaking objection right now, just object.
MR. DUNCAN: Counsel, whether or not you're short of time, it's not fair to the witness to ask him, I don't care if it's an accurate one, just give me a sound bite for the record, is not a proper question.
MR. STOLPER: It's not a sound bite for the record. You know, you shouldn't be doing speaking objections. I can ask any old question I'd like as problematic as I'd like. You'll have your opportunity to object to it, just object.
MR. DUNCAN: I'm objecting.
MR. STOLPER: Okay, thank you. I think we got that point.
Q. (By Mr. Stolper) Now, back to my question.
MR. STOLPER: And I'll note that you're going to object to the following question as well.
Q. (By Mr. Stolper) What's your understanding of what the 1985 Surgeon General's
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report concluded with regard to synergy?
A. Without having read it, and with the caveat that I may incorrectly characterize parts of it, I believe they came to the conclusion that there was some evidence of synergy.

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Q. Okay. Is that based on -- do you know if it's based on epidemiological data?
A. Okay, now you're asking me what is this based on? Now you're asking me to recall a very thick document.
Q. But the whole document didn't relate to synergy?
A. No.
MR. DUNCAN: Objection. Argumentative.
A. You're asking me to cite a very large document that I've asked to read just to refresh my memory on what they said.
Q. (By Mr. Stolper) Would you like a copy of the Surgeon General's report?
A. Sure.
Q. Placed before the witness, and I'll mark another copy of the 1985 Surgeon General's report.
(Whereupon, Dulaney Deposition
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Exhibit No. 9 was marked for identification by the reporter.)
MR. DUNCAN: Counsel, you've been quizzing the witness on a document that you had behind you, could have handed him any time? I object to that. Do I get a copy of that?
THE WITNESS: I'm looking for the Table of Contents.
MR. DUNCAN: Do you care which one he has, Counsel?
MR. STOLPER: No.
MR. DUNCAN: Counsel, you want to stay on the record while he reviews that document?
MR. STOLPER: In the interest of time, I'd rather just let the tape run. Why don't we go off the record for a minute.
THE VIDEOGRAPHER: Off the record. Time now is 6:03 p.m.
(Off-the-record discussion.)
(Brief recess taken.)
MR. STOLPER: Back on the record. Time now is 6:10 p.m.
MR. STOLPER: Dr. Dulaney, off the record we've both looked over the Surgeon General's
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report, and I reached the conclusion that I am done with my examination of you today. Tom, did you have anything you wanted to add?
MR. DUNCAN: No. Our deponent will read and sign.
MR. STOLPER: Thank you, again. I appreciate all your time.
(Witness excused.)

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MARLAND DULANEY, JR. Ph.D., DABT

STATE OF)
) SS:
COUNTY OF)

Subscribed and sworn to before me this day of , 2000.

NOTARY PUBLIC
My Commission Expires:

In re: Robert A. Falise, et al.

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C E R T I F I C A T E

I, KAY L. SCARPINO, a Notary Public within and for the State of Missouri, hereby certify that the within-named witness was first duly sworn to testify the truth, and that the deposition by said witness was given in response to the questions propounded, as herein set forth, was first taken in machine shorthand by me and afterwards reduced to writing under my direction and supervision, and is a true and correct record of the testimony given by the witness.

I further certify that I am not a relative or employee or attorney or counsel of any of the parties, or relative or employee of such attorneys or counsel, or financially interested in the action.

WITNESS my hand and official seal at Kansas City, Jackson County, Missouri, this 16th day of July, 2000.

KAY L. SCARPINO, RPR
Certified Shorthand Reporter

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Case No. 99 CV 7392 (JBW)
CORRECTION SHEET FOR THE DEPOSITION OF

MARLAND DULANEY, JR. Ph.D., DABT

Page	Line	Correction	Reason for change

I certify that I have read my deposition in theabove case and request that the above changes be noted.

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